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Hints on
Home Nursing

By

Dr. J. T. Halliday.

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ON

HOME NURSING.

BY

DR. R. T. HALLIDAY.

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P R E F A C E.

THIS little volume, designed as a handy illustrated guide to the proper nursing of the sick at home, was originally prepared as a text-book for the author's classes on Home Nursing, held under the auspices of the St. Andrew's Ambulance Association. It was felt that none of the numerous text-books on Nursing sufficiently suited the Association syllabus; to supply this want the present volume was undertaken. As far as possible the syllabus referred to is taken as a basis; the order of the divisions is slightly altered.

The author lays no claim to literary merit; and the hints herein offered are culled from the experience of many. It is hoped they may prove of value for guidance and reference, not only to the members of such classes as are held under the auspices of the St. Andrew's Association, but to all who may have at any time the care of the sick. Even for the professional nurse there is much to mark and inwardly digest.

The illustrations are numerous, an advantageous feature not usually found in such works. The author's best thanks are due to the several firms to whose generosity he is indebted for many of those used.

In conclusion, there may be imperfections, but the author trusts they may be charitably overlooked. In extenuation he offers to critics an apt quotation from *Browne's Vulgar Errors*:—"In this work attempts will exceed performances, it being composed by snatches of time as medical vacation would permit."

R. T. H.

POLLOKSHIELDS, GLASGOW,
November 1, 1893.

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INTRODUCTORY REMARKS.

To the majority of ladies the subject of Home-Nursing is, as it should be, one of considerable interest and importance. Too often, unfortunately, there hangs over every household its cloud of sorrow, each family has its visitation of sickness, and as the luxury of a professional nurse is not within the means of everyone, the sister, wife, or mother is at such a time naturally called upon to assume the rôle of attendant upon the invalid. Nursing is essentially the work of woman: it is generally acknowledged to be the prerogative of womankind—

“ The weary head to lull to rest,
To soothe and still the troubled breast
The aching heart to cheer and calm,
And bathe the burning brow with balm.”

It behoves every woman, therefore, so far as lies within her power, to prepare herself for the due performance of the multifarious duties incumbent upon her at such a period, although in those days when much is heard of the higher education of women, this department of the true woman's sphere is apt to be overlooked. All cannot aspire to become senior wranglers, but all can strive to possess that beauty of utility. A useful woman is of much more value than an ornamental or learned one, and the highest education of woman is surely that which pertains to, and fits her for, the duties of her home. Milton has wisely said :—

“ Not to know at large of things remote
From use, obscure, and subtle, but to know
That which before us lies in daily life
Is the prime wisdom.”

It is erroneous to suppose that a little knowledge is always a dangerous thing: the want of a little knowledge of the proper kind is oftentimes productive of much more danger. Very much depends in cases of illness upon the course of treatment prescribed by the attendant physician. But the physician himself will concede that frequently much more depends upon those who carry out his instructions, upon the manner in which those instructions are carried out, and upon the immediate surroundings of the patient generally. Much of the good attempted by the doctor is more than negatived by the conduct of an unqualified attendant. A case may be cited in illustration. Let us suppose two sisters take alternate duty at a bedside. One goes about her work in a quiet, unobtrusive manner without fuss or worry, and leaves the patient *peaceful*. The other wishes to make things tidy, brushes everything in the room, washes the patient, combs his hair, changes his linen, chats a little more than necessary by way of brightening the invalid, and leaves him *delirious*. Sick nursing does not merely consist, as many seem to imagine, in dancing attendance upon the sufferer, obeying the ring of his bell, placing before him the necessary diet, and administering the medicine "three times a day." There is an art in nursing which goes a long way towards improving both the mental and physical condition of the patient and assisting him on to convalescence, a sympathy in the touch or in the look, a gentle, soothing influence in the voice, a confidence in every movement. And thus it is not given to every woman to become an *ideal* nurse. It might even be said that such nurses, like poets, are born, not made, for it is not the woman who fancies herself most "experienced," who has been trained at this home or that hospital, who has seen a deal of trouble, or who has nursed at a plethora of death-beds, that is most successful in the sphere of nursing. The young mother with no experience

or special training can soothe a restless babe to sleep without a word, when others may have rocked or cooed in vain. A kind of instinct or innate sympathy exists which stamps one woman as efficient beyond another, and which neither lecturing nor reading can impart. Unless a woman possess a certain knack and judgment, a desire to do good, and be of service, a keen perception and intuitive power of seeing and even anticipating the wants of an invalid, no amount of training will make her an efficient nurse.

“That good sense which Nature affords us is preferable to the most of the knowledge that we can acquire.” Unless, therefore, there is that sympathetic nature, that delicate, sensitive touch, that inborn desire to alleviate human suffering which inspires the due appreciation of the importance of little things, there can be no real aptitude for nursing. Without this the many little unpleasant duties to be performed in the sick-room are apt to be looked upon as cumbrous and irksome; and the wry faces pulled and the heavy sighs drawn cannot escape the patient, who is frequently watching the attendant more keenly than she watches him. “True delicacy, that most beautiful heart-leaf of humanity, exhibits itself most significantly in little things,” and the true nurse is prompted to

“ Little kindnesses
Which most leave undone or despise;
For nought that sets one heart at ease,
Or giveth Happiness or Peace,
Is low esteemèd in her eyes ”

More than this, however, is requisite for the execution of the nurse's task. Kindness of heart prompts to good deeds, but without a knowledge of the practical details that kind-heartedness were valueless. That knowledge which confers the power to perform I shall endeavour to impart. You must not expect that the mere study of those hints penned

for your guidance will give you a claim to be regarded as experienced or ideal nurses. Such is far from my intention. But I shall presuppose you all gifted with that soothing grace of human compassion and friendly sympathy which means so much to the invalid ; with that ennobling influence and obliging disposition which are the special attributes of your sex. I shall credit you with the desire to be useful, the aspiration to attain proficiency so far as your talents will admit. And I shall place within your reach the knowledge to attain that end—knowledge which, if followed out in practice, will assuredly provide for the physician an intelligent and reliable, in place of, as is too frequently the case, an incapable and useless, assistant ; knowledge which at some time may bring to yourself or to those around you solace and comfort, and possibly mitigation of suffering. Then, if you are zealous in your work, doing cheerfully what your hands find to do, you will by a high ideal of your responsibility earn the trust and esteem of your physician and the confidence of your charge. It may then with all the more reason be said—

“ When pain and anguish wring the brow,
A ministering angel thou.”

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HINTS ON HOME NURSING.

I.—THE SICK-ROOM.

SELECTION—VENTILATION—LIGHT—WARMTH—CLEANLI-
NESS—ORDER—FURNISHING—MISCELLANEOUS HINTS.

IN dealing with the subject of Home Nursing, I shall begin by referring to the invalid's apartment, which is termed the sick-room. First, see to its proper location. When sickness makes its appearance you may not always have a choice of apartments, and, therefore, must make the most of what you have. But where practicable, see that you have a large room, in which the invalid will not feel "cribbed, cabined, and confined," preferably at the back of the house, and as far removed from the kitchen as possible. The patient is thus freed from the noise of traffic in front, and from the disadvantages associated with the cooking of food. The constant stir and bustle of life on the street induces continual fretting, headache, and insomnia, while the close smell inseparable from cooking is apt not only to impair the appetite but to disorder digestion, render the patient heavy, and possibly sick. This may be a serious matter for the invalid, whose illness sufficiently restrains the appetite, and whose weakness sufficiently injures his digestive powers. As a rule, the nurse must prepare and serve the food in a tempting manner in order to stimulate the flagging appetite, a difficulty considerably increased when handicapped by the surroundings of the patient. The room must also be airy, and if it

have a southern or south-western exposure so much the better. This brings me to the important question of

VENTILATION.

"UNCLE TOBY.—Now let us have a little ventilation, but not a draught. I hate a draught."—*Tristram Shandy*.

"Pure air is the breath of life; foul air the angel of death."

A spacious, high-roofed, well ventilated room, provided with door, window, and fire-place, allowing an interrupted admission of fresh-air, and the free escape of tainted or impure air, is a very valuable factor in the successful management of the sick. Ventilation is as important as diet and medicine, and in many cases even much more so. An extract from the *Times* of September 4, 1863, will serve as an apt illustration:—

"GROSS SUPERSTITION.—In one of the streets of Taunton there resides a man and his wife who have the care of a child. The child was attacked with scarlatina, and to all appearance death was inevitable. A jury of matrons was, as it were, empanelled, and to prevent the child 'dying hard' all the doors in the house, all the drawers, all the boxes, all the cupboards were thrown wide open, the keys taken out, and the body of the child placed under a beam, whereby a sure, certain, and easy passage into eternity could be secured. Watchers held their vigils throughout the weary night, and in the morning, to the surprise of all, the child did not die, and is now gradually recovering."

This may illustrate the existence of a foolish superstition, but it also shows how a human life was saved by the throwing open of doors, and the securing of fresh air by ventilation. We do not sufficiently appreciate the importance of the sustenance we take by the lungs, even though we may be very particular in regard to that taken by the stomach. It would, doubtless, be considered the height of folly to imbibe the stagnant water of a dirty pool, and yet we are not adverse to imbibing the stagnant air of a polluted room. This is not as it should be. Bad food or water can be

rejected at will, but respiration is a function beyond our control, and we cannot avoid the inhalation of the atmosphere which immediately surrounds us. Hence the necessity for keeping it pure and untainted. The atmosphere without consists, roughly speaking, of three gases, oxygen, carbonic acid, and nitrogen. With the latter we have not at present to deal. But the system must have for its nutrition a supply of oxygen, without which we should soon cease to exist, and must also have secured the elimination of the waste carbonic acid, which is continually thrown off during respiration. We breathe on an average about 32 cubic inches of air per minute, over 16 cubic feet per hour, and this when exhaled contains about 120 times more carbonic acid than when taken into the lungs. This results from the consumption of oxygen. This carbonic acid though essential to the life of plants, is, in its undiluted form, a deadly poison to the human system. A man sleeping in a cubic shaped room, measuring say seven feet each way, would, without a fresh supply of air, succumb to his own exhalations within a few hours. In 1756, Surajah Dowlah, the Nabob of Bengal, confined 146 English prisoners in the Black Hole of Calcutta, a den 18 feet long by 14 feet broad. Only twenty-three survived the night's incarceration, the remainder having succumbed to the poisoned atmosphere. It is a well known fact, too, that the previous heavy mortality from chest-diseases among the regiments of guards in London, was due to the inefficient ventilation of the barrack rooms in which they were quartered. A proper supply of fresh air, therefore, is essential to the preservation of life and health. And although the inhalation of the tainted air of close rooms may not cause, in your eyes, any immediate or visible deterioration of the system, yet the headaches, the drowsiness, the general apathy and listlessness, the furred tongue, and the foul breath, so often complained of, point

to the slow but sure impairment of the vital energies. And if this be so in our usual health, how much more important is renewed air to the system already deteriorated by illness, exhaling air charged with the foul vapours and germs of disease, into an atmosphere already rendered impure by the *burning of gas, probably all night*. For each burner will consume on an average, even at its lowest, as much oxygen per hour as the patient. In Ventilation we aim, therefore, at securing a constant and steady supply of pure air from the outside to displace this foul air within, and this without exposing to chill the occupants of the room. I have said *from the outside*, for ventilation by means of a door alone is far from being satisfactory. True, by opening the door we allow an interchange of air, but that is no criterion that the inlet air is purer than that which it may displace. Florence Nightingale says :

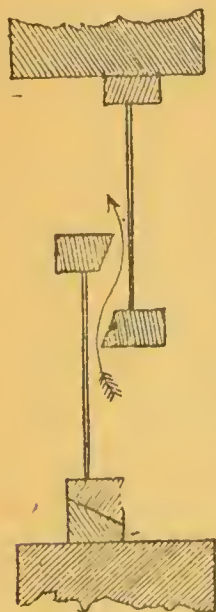
“I have seen a careful nurse airing her patient's room through the door, near to which were two gas-lights (each of which consumed as much air as eleven men), a kitchen, a corridor, the composition of the atmosphere in which consisted of gas, paint, foul air never changed full of effluvia, including a current of sewer-air from an ill-placed sink, ascending into a continuous stream by a well staircase, and discharging themselves continually into the patient's room.”

This is not an isolated case, and serves to show that the admittance of air from the other parts of the house is not necessarily efficient ventilation of the sick-room. Thus, if a lighted taper or candle be held to the keyhole of the closed door, and the flame be blown inwards, it points to inefficient ventilation, for it is evidence that the main inlet of air is through the keyhole from the outside of the room. The only means, therefore, of ventilation is by the fire-place and the window. As regards the former, you may have any little good from it negatived by the damper of the grate being kept closed, or the chimney, as is too frequently the case, stuffed up with newspapers. Such devices are the

result of ignorance practised to exclude cold air, the very air which is the breath of life. A fire in the grate, or even a lamp placed on the hearth, considerably improves matters by causing an upward current, which draws the air from the room; but ventilation purely from the fire-place is also very unsatisfactory.

The *rationale* of this is not far to seek. Expired air is warmer and lighter than that inspired, and, consequently, when exhaled, ascends toward the roof. You may often have observed when hanging curtains or pictures, that the air around you at the top of the ladder or house-steps is hot, close, and stuffy. This air is what must be got rid of, and we consequently aim at securing its outlet through as high a channel as possible. Hence there is no method more satisfactory than the opening of the *window at the top*. The inadvisibility of opening it at the bottom will therefore be evident, besides the endangering of the patient by creating a draught. By lowering the upper sash of the window a couple of inches you secure an inlet of fresh air and a displacement of the foul air, and in order that this ventilation may be efficient the window must be open; not periodically, but continually. In order to obviate the danger of chilling the patient, the cold air thus admitted to the room should have an upward direction. If the blind be a Venetian one this can be managed by sloping the strips of wood upwards. Failing this, there are several methods of securing the necessary direction. One is to have the bottom edge of the lower sash so constructed as to overlap the bottom of the window frame. The lower sash can then be raised without allowing the admittance of air underneath it, the overlapping part preventing this. A rush of air directed upwards is thus allowed *between the window sashes*. A much easier plan on the same principle, and one which can be followed out in any room, and with any window, is this: Procure a

piece of wood, in length the exact size of the window-frame, and about three inches in depth. Raise the lower sash and place this piece of wood underneath it. It should fit the window exactly, and then the window should be closed down upon it. Air is thus prevented from entering at the bottom, but there is a constant current passing into the room between the sashes, and, as before, directed towards the roof. The accompanying diagrammatic section will assist in making this clear.



The air may be filtered also during frost and fog by means of a muslin curtain across the orifice.

It is always safe to have a draught-screen in the sick-room ready for use if required, and in the event of no such screen being at hand, it is a simple matter to improvise one by hanging a rug, blanket, or sheet over an ordinary clothes horse, or even over a cord stretched from convenient points across the room. Beware, however, of pseudo draught-screens, with leaves about half an inch apart at the hinges. These may be highly ornamental and beautiful to behold, but in the sick-chamber they are a delusion and a snare, and worse than useless for the purpose which their name implies. This can readily be proved by placing one in position and applying a lighted taper or even the open hand to the hinges.

In order to test the purity of the atmosphere within a room, the following rough and ready method will be found sufficient. Procure a large wide-mouthed stoppered bottle, and having thoroughly cleaned and dried it, stuff it with a clean dry towel or serviette. Take this into the room, and

having closed the door, remove the cloth rapidly from the bottle. The result is, that air takes the place thus vacated by the towel. Now place in the bottle an ounce of clear lime-water, and having applied the stopper, shake up the lime-water with the air inside. If the air be pure, the lime-water remains clear; but if carbonic acid gas in any quantity be present, it combines with the lime to form carbonate of lime or chalk, and this gives to the lime-water a muddy or milky appearance.

Ventilation should, of course, be constant, even during the night. There is a popular fallacy that night air is injurious; there is no valid reason why it should be so. Pure air must be supplied by night as well as by day, and this cannot be secured otherwise than by the admission of pure night air from the outside.

In cases where an invalid is permitted to leave the room at any time, take the opportunity thus afforded you of opening the windows wide, and thoroughly airing the apartment and its contents.

Lastly, avoid damp air, which is, in many cases, highly dangerous. The practice of hanging wet cloths or towels in a sick-room to moisten the atmosphere is an evil one. This should never be done, and in cases where the physician wishes moist air, a bronchitis kettle should be used, an appliance which will be referred to in a subsequent chapter.

LIGHT.

“ Prime cheerer, Light !

Of all material beings, first and best.”—*Thomson*.

“ Oh ! 'tis the sun that maketh all things shine.”—*Shakespeare*.

In addition to fresh air, we must secure in the sick-room abundance of light and sunshine. Sunlight is a capital purifier and disinfectant. For the maintenance of health it is absolutely essential: Dr. Forbes Winslow says there is no vitality or healthful structure without light. How much

more so is it essential for the body weakened by disease. You have probably noticed how sprouts of onions or potatoes which have been kept in the dark grow towards the light, and remain pale and colourless till they secure it. The plant at your window seeks the light, and gardeners to blanch their celery protect it from the sun. Similarly the inhabitants of dark streets and lanes are always pale and in want of stamina. An eminent Scottish divine, in a public lecture, stated that an appreciable difference could be detected in the moral tone of the tenants of the sunny side and shady side of the streets: the absence of sunshine had not only an unhealthy but a demoralising tendency. This may be a rather astounding statement, but the importance of securing light is seen in every department of life. I have already referred to plants. Still higher in the scale of life we find that the tadpole kept in darkness becomes stunted in growth and its development is checked. Instead of becoming, as it should become, a frog, it lives and dies a tadpole. The experiments of Graffenberger furnish us with valuable results. His investigations proved that rabbits kept in darkness rapidly deteriorated, their bones became soft and their flesh diminished; while others similarly fed and cared for in the light thrived and grew. The pit donkeys in coal mines soon become weak and sickly underground, and require a periodical graze in the sunshine. Still higher, Dr. Ellis points out that in the log-cabins of the settlers in the Western States the inhabitants were always healthy and strong. By-and-bye, however, when the settler had accumulated a goodly hoard, he built himself a house in the modern style, with all modern conveniences. He furnished it with blinds and curtains, and then the result of the curtailment of light became evident. The women and children became pale and bloodless; anæmia and consumption followed as a matter of course. It was discovered that in the hospitals of the Russian capital the

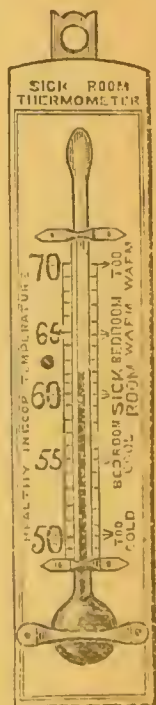
number of patients cured in well-lighted rooms was *four times greater* than among those confined in dark rooms, and this led to a reform in the lighting of Russian hospitals which bore excellent fruits. The early Orientals knew the value of sunlight when their architects utilised the housetops. Why should we retrocede? Light and sunshine are Nature's beautifiers. Do not therefore deprive yourself of the hygienic powers of sunlight to save your carpets or furniture. Light assists the recovery of the invalid. No soporific or anodyne is more potent than the sun. See, therefore, that the blinds are up. The patient then becomes healthier, brighter, and cheerier, and dust and dirt are not courted. Be careful, however, not to let the sun's rays strike directly upon the invalid's face. If he cannot bear the light, protect him by means of a shade or screen; but do not darken the whole apartment even though it be thus necessary to darken a part of it. In cases of brain or eye disease, the doctor may wish the blind drawn, and will give directions accordingly. But in all other cases "Let in the light!"

TEMPERATURE.

"Use a temperate heat, for they are ever temperate heats that digest and mature."—*Lacon*.

The next point with regard to the sick-room is its temperature. This should always be equable; in many cases nothing is fraught with more danger to the invalid than sudden rises and falls. The temperature of the room is ascertained by means of a small thermometer. These are purchased very cheaply nowadays, and no sick-room or sleeping apartment should be without one. Darton's special sick-room thermometer is also illustrated here. Place the thermometer on the wall, at the head of the bed, and about the height of the patient. It should never be placed near the fire, on the wall near the chimney, near a wall gas-bracket, nor in a draught

of cold air. Either of those conditions may interfere with the correct registration of the heat of the room. See, too, that it be not placed on the wall immediately behind the fireplace of the adjoining apartment. The temperature is ascertained by the ascent of a column of mercury along the graduated scale of the instrument, and this scale may be either Centigrade or Fahrenheit. In the former the freezing point of water is taken as zero, and the boiling point as 100 degrees. In the latter, however, which is the older of the two, and therefore that which is generally used in this country, the freezing point of water is 32 degrees, zero being the point obtained by a mixture of snow and salt, and erroneously supposed by Fahrenheit to be the lowest point attainable. The boiling point of water is 212 degrees. The degrees, therefore, are much smaller. Unless you have instructions from the medical attendant to have it otherwise, keep the temperature from 60 to 65 degrees Fahrenheit. Much will depend upon the nature of the ailment, but in special cases the physician will give special directions as to this. As a general rule, during



the night or early morning the temperature is lower; see, therefore, that larger fires are kept on at these times, in order to obviate any anticipated fall. In heating a room, never do so at the expense of a pure atmosphere. The air may be

warmed without interfering with the proper ventilation and so making it foul.

CLEANLINESS.

“Cleanliness is next to godliness.”—*John Wesley*.

“The mistress thought it not to need any exquisite decking, having no adornment but cleanliness.”—*Sidney*.

Cleanliness in every department of the sick-room cannot be too earnestly insisted upon, and as the patient is not usually in a condition to admit of a thorough cleaning out of the room, regular and frequent dusting is all the more essential. With cleanliness we defy to a great extent the germs of disease. “Cleanliness is not only next to godliness, but it is next to life and health; and although the germ scare may be overdone, yet it will produce good results in the hands of intelligent people.” Everything in and around the room should be dusted daily, and no part of the room omitted. Cleanliness under the bed is as important as cleanliness on the top of it. The sheet should be clean as well as the bed-mat, and those parts of the room which are not open to inspection should nevertheless be accessible to the duster. Every spoon or dish used by the patient, every medicine glass or tumbler, should be rinsed immediately thereafter. The night-stool and *pôt de chambre* should also be thoroughly cleansed after use, and a little cold water, Condyl’s fluid, or carbolic solution allowed to lie in them in order to ensure purity. Carpets should be cleaned at the very least once a week, but no carpet at all is preferable. Carpets fixed to the floor cannot be conducive to cleanliness in any room, and the sooner we return to the uncarpeted bedrooms of ancient times the better for the health of the community. Rugs are much superior, having the advantage that they can at any time be taken up and thoroughly cleansed. Chimneys should be cleaned well before the room is occupied, and all smokiness avoided. But, if your

chimney *will* smoke, then place a long upright board up the inside, and in the majority of cases you will find this simple cure efficacious. A hint may also be added here regarding purity of water. This is secured by filtering, and a cheap, handy filter may be made at home which will serve the purpose as well as the more expensive ones. Take an ordinary large-sized flower-pot and plug the hole in the bottom with a piece of sponge : then into the pot put a layer of powdered charcoal, about an inch thick ; above this a similar layer of silver sand ; and above this a two-inch layer of fine gravel and pebbles. Run the water through these media, and let it drop from the sponge into a receiver placed about two feet below, in order to oxygenate the water by its fall through the air. You will then find it pure, sparkling, and bright. Further remarks on cleaning the room will more naturally fall under disinfection.

ORDER.

"All things are soon prepared in a well-ordered room."

"'Tis the girl that's orderly, makes the household pleasure."

Before any work can become a pleasure, the law of order must be observed. Unless you have order in the sick-room continual worry is the result, and this law of order must extend even to trifles. A stray pin upon the floor may cause more uneasiness than misplaced tables or chairs. All pins should be placed in the proper receptacle and nowhere else. The cushion exists for pins, and the practice of placing them in the apparel, in the pillow, or in the bed, is foolish in the extreme. If lost in the bed or pillow they are apt to be unpleasantly discovered by the patient, while in the case of a water-bed or air-pillow, the evil habit might have disastrous consequences. In the sick-room there should be a place for everything, and everything in its place. All utensils should be kept apart and placed where they can be readily reached when required. Scissors, pins,

pencil, and clinical thermometer should always be handy, and a good plan for the attendant is to wear a chatelaine with such requisites, as is done by nurses in hospitals. It will, of course, depend upon the nature of the case what articles are most required.

"This love for order hath a wondrous power,
Creating sunshine in the dreariest hour ;
It makes affairs run smooth that else would be
Without the pale of fair affinity."

Another important point is order in medicines. A litter of bottles and pill-boxes is not advisable, and these necessary evils should be placed out of sight, but just where you can lay your hand upon them when wanted. Every sick-room should, in fact, contain a special handy cupboard either on the wall or mantel, in which small articles or appliances could be placed. Here all medicine bottles, etc., should be kept. Never, however, keep medicines for internal and external use together. There is always the possibility of an error. An excellent plan pursued by most chemists is that of dispensing poisons and external applications in ribbed coloured bottles, so that the difference is at once evident both to touch and sight. And yet mistakes arise withal. A recent case of carbolic acid poisoning—a case under the care of a professional nurse, fully exemplifies the necessity for this attention to order. I cull the following with



reference to the case from the *Lancet*, as it is well worth reprinting :—

“A very unfortunate occurrence at Bengoe College, Hertford, which has been fully reported in the daily press, has drawn attention to the vital importance which seemingly small details in the training of a nurse may assume. A pupil of the school has succumbed to the effects of a dose of carbolic acid, administered to him in mistake for a cough mixture by a professional nurse, whose conduct has naturally enough been very severely commented upon in view of the sad mishap which she has met in connection with this patient. She appears to have committed the oversight of placing a bottle containing the poison upon a table amongst other bottles containing medicine at a moment when her attention was demanded by one of several patients whom she had in charge, and of having subsequently forgotten to remove it to a place of safety. This light breach of routine had the most lamentable consequences. The nurse retired to rest, and was aroused from sleep by one of her patients. Whilst still but half awake she administered what she supposed to be a dose of cough mixture, it being, in fact, a dose of carbolic acid, and was startled into full consciousness only by being told by her patient that the medicine tasted ‘like liquid fire.’ It is impossible to hold this unhappy girl responsible for having failed whilst half asleep to recognise the shape of a poison bottle or to consult the label before administering the contents. The derelictions would amount to gross negligence on the part of any nurse in full possession of her faculties; but those who ‘rouse and bestir themselves ere well awake’ can no more now than in Milton’s day escape confusion. The rider added by the jury to their verdict, that the nurse was not sufficiently awake at the time ‘to make her criminally responsible for the act,’ appears upon the evidence reported to be no less just than humane. Against a mischance like this the only possible protection is afforded by a carefully-devised routine of work, and it is in the cultivation of habits in accordance with such a routine that a very large part of a nurse’s training consists. The original error by which the bottle of carbolic acid was placed in a position to be mistaken for a medicine bottle is precisely one of those little slips so easy to commit by a perfectly innocent oversight that none but a trained person can hope always to avoid them, though to a thoroughly trained person they should be impossible of commission.”

Cases of a similar nature are, unfortunately, by no means uncommon, and many such reports might be cited. The following, which points a similar moral, and which appeared

in the *Chemist and Druggist* of 10th January, 1891, will suffice :—

"THE WRONG BOTTLE.—Mrs. Kendal, the well-known actress, has been nearly the victim of the careless habit of keeping poisonous and other fluids in bottles of somewhat similar appearance. She was playing at Philadelphia, and in the course of the evening went into her dressing-room and asked her maid to give her a glass of Vichy water. Mrs. Kendal always carries with her a solution of chloride of zinc for disinfecting purposes, and the maid, in the semi-darkness, poured the draught from the chloride bottle. Mrs. Kendal taking a hearty gulp, noticed its peculiar flavour, and discovered to her horror that the maid had served her with the chloride instead of the Vichy water. A doctor was brought in, and Mrs. Kendal was enabled to return to the stage without the audience guessing that an approach to tragedy intervened in the course of the comedy. She was not very well on the following morning, but was able to keep her engagement at night, and has since felt no ill effects from her adventure."

FURNISHING.

"Here wealth had done its utmost to encumber
With furniture an excellent apartment."—*Byron*.

"And fit it with such furniture as suits. . . ."—*Shakespeare*.

The furnishing of the sick-room should be as simple as possible, yet with that simplicity aim at beauty and seemliness. Do not overload the room with artistic decorations, but see that what decoration is permissible is neat and well arranged. There is a golden mean which, in the sick-room as in everywhere else, suits best for working purposes. Have all useless furniture removed, whether the case be infectious or not. Only retain what is essential and useful, and the result is less trouble in dusting and cleaning. Stuff-bottomed chairs and lounges are objectionable, being difficult to thoroughly clean, and in infectious cases not easy to disinfect. All dresses, hats, coats, all wearing apparel and household linen, should be removed from the room ; and the folly of having a wardrobe in the apartment with an infectious case needs no comment. Carpets should be raised, in the

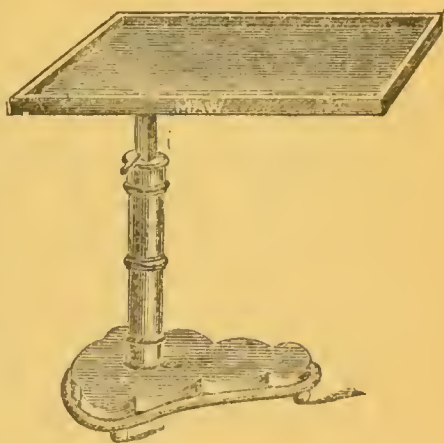
interest of cleanliness, and only strips left to walk upon. No clocks or timepieces are admissible ; it is surprising how their incessant ticking may worry some invalids. Many such apparent trifles must be attended to. The coal vase should if possible be a noiseless one ; if not, a basket had better be substituted. The noise of ashes dropping upon the hearth may be avoided by placing sand under the grate. Fire-irons should be dispensed with, and an old walking-stick or piece of wood do duty in their place. Coals should be lifted with the hand encased in an old glove, and should be quietly laid upon the fire. Creaking hinges on doors should be well oiled. A few pictures around the room will relieve the cheerlessness of the bare walls. Flowers or plants are not objectionable, as many erroneously suppose. They are cheering to the invalid, who watches their growth and development, but those with heavy perfumes should be eschewed. Plants purify the air of the apartment, so long as there is light and sunshine, and even during the night, when they eliminate carbonic acid vapour, the contamination of the air is so infinitesimal as to be of no consequence in a well-ventilated room. Such points as those may appear to you but trifles unworthy of notice, but when you have experienced a long, monotonous illness, the importance of such trifles will be more fully appreciated.

While on the subject of furnishing, I may draw attention to several special appliances which, though not absolutely essential, are very valuable and useful in the sick room. They may be classed as luxuries, but, as they are frequently of great service, and save much trouble and discomfort, a brief reference may not be without its value. Cupboards I have already mentioned, and these are made in a variety of forms.

A bed-table is in many cases almost essential. Of these there are also many varieties, and a small, handy, portable one is illustrated. This can be used projecting over the

bed, allowing meals to be placed before the patient as he lies or sits in bed, without causing him any discomfort. It is fitted with sliding leg, and so can be raised to, and fixed at, any required height.

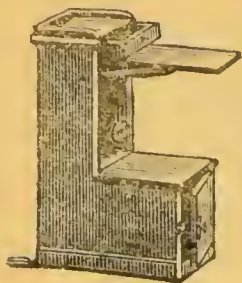
This convenience is a great boon to invalids when taking meals, and is much superior to tables or trays placed on the bed, which are always liable to be upset. When not in use thus at mealtime, this can be used simply as a bedside table, on which flowers, fruit, medicine glass, etc., may be placed.



Another valuable adjunct is the bedrest, a support for the back of the invalid, as he sits or is propped up in bed. This apparatus can be fixed at any angle, and is preferable to the clumsy and uncomfortable practice of placing cumbersome stools or chairs in bed, or even supporting the patient by a superfluity of pillows. A useful contrivance which can be adapted to a variety of purposes in the sick-room is a novelty recently introduced by Jno. Carter, of London, and designated the Multiform Ward Locker. The bottom locker forms a seat, and can receive in its interior a *pôt de chambre*. At the top is a medicine-drawer, while between this and the seat is another locker or cupboard which may be utilised for anything. This is provided with a flap door which can be adjusted to



any angle, and as the seat is sufficiently low to be placed under the bed, the flap can serve as a bed-table or writing-desk. The whole locker may be used as a bedside-table, as little articles may be placed upon the top. The illustration will explain this ingenious appliance.



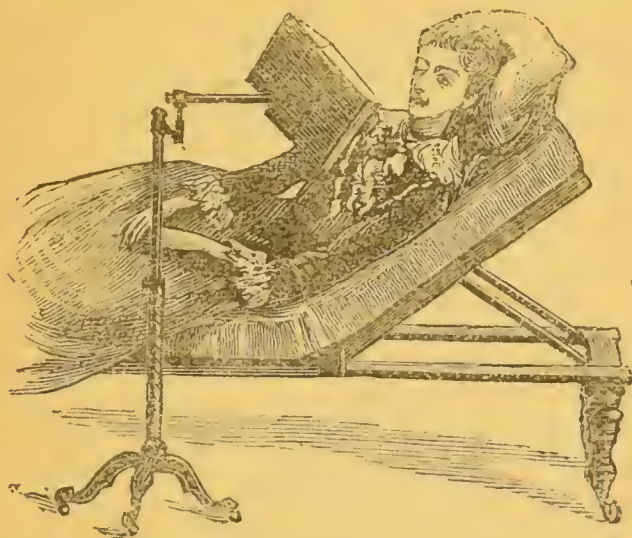
To the same inventor * we are indebted for a "literary machine," another specialty which is useful to those in good health as well as to the bedridden. It is designed to obviate the fatigue of holding a book for reading, and the cramped positions at times necessary for convenient writing.



It consists of a stand mounted on an arm adjustable to any angle and any position, and made in a variety of forms, with lamps, writing-tables, etc. They have proved serviceable

John Carter, New Cavendish Street, Portland Place, London.

to all classes, including royalty. Our Queen conveyed such a machine to Germany for the use of the Emperor Frederick in his last illness ; and the accompanying illustrations show



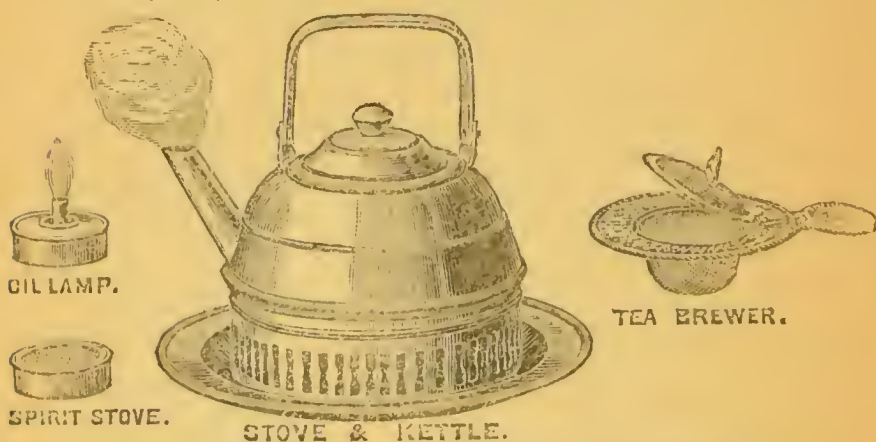
them in use in the one case by the late Rev. Charles H. Spurgeon and in the other by the Queen of Italy.

Clarke's Adjustable Bed-Tray and Food-Warmer are very convenient at the bedside. The former consists of a tray which can be adjusted to any bedpost and at any required height. It is adapted for use in connection with the food-warmer, and when not in use can be turned to the wall in such a manner as to shade the person in bed from the rays of light. It contains a little box for medicine, a book-stand, watch-holder, and Clarke's food-warmer ; and by means of a slide this tray can be pulled forward to the position



required, while the whole apparatus can be swung round to the bedside when necessary. The food-warmer not only provides light for the room, but the heat from the night light is utilised to keep any fluid warm when placed in the receiver above. This receiver, moreover, is so constructed as to avoid spilling in pouring out its contents, and food can be poured without the grease or seum which may float on the top passing through the spout. It is most useful for sick children, or eases which require feeding during the night.

“Everybody’s Friend,” as the inventor * has termed the

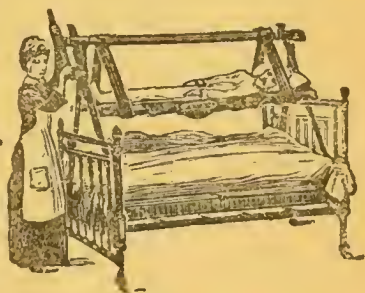


apparatus here shown, is also very useful in the sick-room. It consists of a kettle, capable of holding a pint of water, which may be placed under the oil lamp or spirit stove supplied. To boil water, use the spirit lamp; the other lamp burns colza oil, and is used as a night light, which gives neither smoke nor smell, and which has sufficient heat to keep food or water in the kettle warm. The tea-brewer attached is also handy. It can be placed on a cup, the tea placed in it, boiling water poured over it, and the lid then closed; in a few minutes the tea will be infused.

Invalid lifts are used in eases where the invalid is heavy

* F. Wallis, Edgbaston Street, Birmingham.

and helpless, and cannot be conveniently moved, as in paralysis, acute rheumatism, spinal affections, or accidents. By the use of such an apparatus as shown in the accompanying drawing a patient can easily be raised from the bed by one person without pain or discomfort, or danger of causing injury. There are numerous forms of such lifts—all, however, consisting of a framework upon which the patient lies, and which by some mechanism can be raised upwards from the bed without jar or jolt, and so allow of the renewal of sheets or bedding without disturbing the invalid or being incommoded by him. Bedsores are therefore avoided, and in such cases where they do exist, they can be more readily attended to, and heal much more rapidly. The lift here illustrated can be affixed to any bed, and has a decided advantage in being simple and requiring no elaborate screwing and fixing.



CARTER'S INVALID LIFT

MISCELLANEOUS HINTS.

"Little deeds of kindness, little words of love,
Make this earth an Eden, like the heaven above."

In the sick-room always use safety-pins instead of the ordinary variety.

Never allow any cooking in the sick chamber.

Don't bustle about the room dusting or cleaning while the patient is taking food.

Never air anything or dry anything before the sick-room fire.

The carpet can be readily and satisfactorily dusted by rubbing over with a damp cloth.

Small beds are always handier than large ones.

A strap fastened to the foot of the bed is useful to enable the patient to raise himself up.

Never permit of milk standing in the sick-room—it quickly absorbs impurities.

Oil or candle-light is preferable to gas-light, being less trying to the eyes, and consuming much less oxygen.

Drinking water should not be allowed to remain any length of time in the room.

Don't clean or tidy the patient or apartment hurriedly when you hear the doctor coming.

Allow no visitors except under the physician's instructions.

Carpets in the sick-room, even when movable, should not extend under the bed.

Green blinds are best, this colour being preferable for the eyes.

To preserve ice, fill a small pitcher and place it on the centre of a piece of paper; then gather up the sides of the paper together over the pitcher and place round them an elastic band to hold them tight. It is said that ice so kept may stand in a room overnight without much appreciable melting.

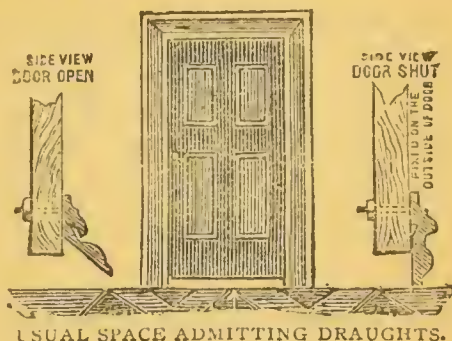
Ice may be broken into pieces of any size by piercing with a large needle, or the point of the needle may be placed to the ice and the head of it then knocked with a hammer.

Remove all cups and glasses as soon as used and all bottles when empty.

Have no food in the room with the exception of that which the patient is frequently partaking of, such as ice, calf foot, chicken or beef jelly, Valentine's or Wyeth's meat juice or liquor carnis, lemon or wine whey, bovril, seltzer water in siphon or gasogene, and such like. These may be placed upon the bedside table or other convenient table in the room.

With reference to draughts, many doors, even when shut, admit quite a rush of air underneath, due to the space between the door and floor being in excess of requirements. The illustration shows "Slater's Patent Draught-Preventer," which is exceedingly useful in this connection. The cut explains itself.

See that lukewarm water and towel and some pleasant disinfectant soap are ready for the doctor's use.



In cases where the physician's hands may be rendered odorous by the dressing of foul sores, or the use of some dressing such as iodoform or creolin, have a little Florida water, Eau de Cologne, or other perfume for his use. You would at once remark a foul odour from the doctor's hands were he to visit your bedside after such a case. Do, therefore, as you would be done by.

Have paper, pen, and ink at hand should the doctor require it for writing a prescription or certificate. When you bring the ink-stand see that the ink bottle contains ink, and that the pen will write.

Keep the bedding free from crumbs.

Don't allow untasted meals to lie in the sick-room in the vain hope that the patient may take them later; the appetite under such conditions will not return.

"Discharge aright the simple dues with which each day is rife."

Schiller.

Remember that "the smallest hair throws its shadow."—*Gæthe.*

"Let all your things have their places: let each part of your business have its time."—*Dr. Franklin.*

II.—BED AND BEDDING.

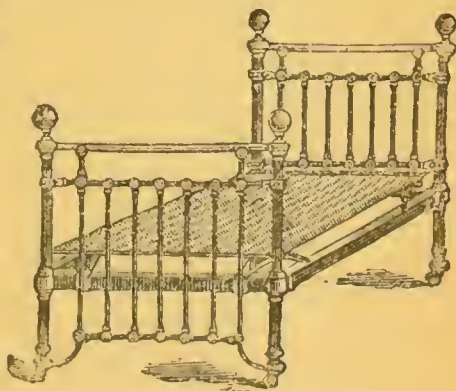
“Nor will the raging fever’s fire abate,
With golden canopies and beds of state ;
But the poor patient will as soon be found
On the hard matrass, or the mother ground.”—*Dryden*.

THREE main points with reference to the position to be occupied by the bed, are worthy of note. First, as regards the light ; second, as regards draughts ; and, lastly, convenience. The foot of the bed should never be towards the window. Rather have the light shining upon the patient’s back ; “the light is best behind,” says Sir C. Locock. Avoid placing the bed in the direct line between the door and window, or between the door and fireplace. Such a position would but ensure a chill to the invalid from the draught. For convenience, place the bed so that the attendant may move completely round it, and, therefore, pass to either side of the invalid without disturbing him. Avoid concealed beds. They are very unhealthy, more especially for invalids—being, as a rule, close, stuffy, and never thoroughly ventilated.

An ordinary iron bedstead is to be preferred—the narrower the better. The ancient four-poster, with its superfluity of hangings and draperies, is far from healthy, in fact all hangings should for this reason be discarded. These only interfere with ventilation, gather dust and dirt, and cause inconvenience both to attendant and sufferer. It is said that if a canary be placed at night in a cage hung within a curtained bed which is occupied it will succumb to the foul air before morning. This illustrates the unhealthy tendency of such draperies. Vallances, too, should be removed, and as no boxes or lumber of any kind should be allowed to lie under the bed, the necessity for them is dispensed with. The *pôt de chambre* should be placed either in a night-stool, commode,

or other such receptacle, and should not lie under the bed. Rubbers round the bed castors are very useful in preventing noise caused frequently by the necessary moving of the bed. If the patient can possibly be moved without danger, it is always desirable to have two beds in one room, or even a convenient couch, bed-chair, or hammock, to which the invalid could be transferred for a few hours daily. This not only permits of the proper airing and making of the bed on which he rests during the night, but it also secures for the sufferer a certain amount of variety and change of scene. It is extremely monotonous to lie day after day in the same position, seeing continually the same objects unaltered before one. A change of position and scene is therefore often highly advantageous, relieving the dullness and monotony which is apt to supervene. Even an occasional change from the one end of the bed to the other is stimulating and enlivening.

Aim at making the patient as comfortable as possible by providing a firm but soft bed, with nice light cool covering. Feather beds are not advisable. They are not sufficiently firm and cooling; they absorb the emanations from the body, giving the bed a sour unpleasant odour, particularly in cases where perspiration is profuse; and in infectious cases they are difficult to thoroughly cleanse and disinfect. A horse-hair mattress is much superior, with either a chain, spring, or wire, or even an ordinary straw one underneath. The illustration shows Wood's Patent Galvanised Steel Wire Mattress, which is

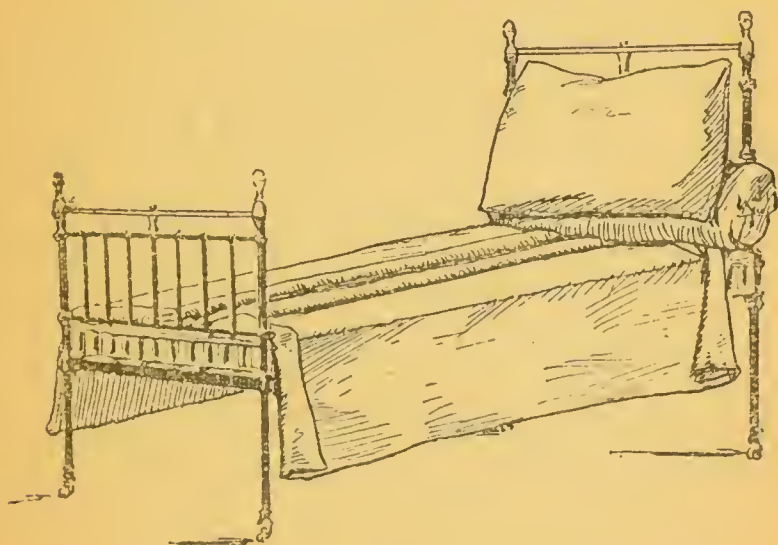


preferred in many of the first-class hospitals. Pillows should also be of hair, and not too thick, as they are then apt to bend the neck unduly. Keep the pillow well under the shoulders of your charge, as it is most uncomfortable to have the edge just under the hollow of the neck, and the chin consequently thrown forward on the chest. The pillow-cases should be linen, which is much cooler and less absorbent than cotton; the sheets and counterpane should also be of the same material. Blanket sheets should not be used, more especially in cases where bedsores form. They only absorb moisture, and act therefore as a poultice. A waterproof sheet or piece of mackintosh may be advisable, in which case it is placed underneath the linen one, between it and the under sheet. Care must be taken to have the sheets well stretched over the mattress; irregularities and creases underneath the patient result in discomfort and irritation, and may end in bedsores. If there be any such sore or discharging wound, place under it a piece of mackintosh sheeting. Blankets should be woollen, and light; quilts should be avoided, more especially in infectious disease.

A "draw sheet" is very handy in the majority of cases, as being easily changed. It prevents the soiling of the bed, too, in cases of wounds or sores. It consists of an ordinary sheet folded and so placed under the patient as to extend from the shoulders to the knees. In the case of children, or where the patient has no control over the excretory organs, it is advisable to have under this a piece of mackintosh of similar size, or some other waterproof material. The draw sheet may be square and pinned to the linen sheet to avoid shifting, or it may be oblong and extend across the bed, being tucked in under the mattress at each side, and so forming a binder which will assist in keeping the sheets in position. By means of this draw sheet also the patient may be moved in bed, two persons taking each a side and lifting

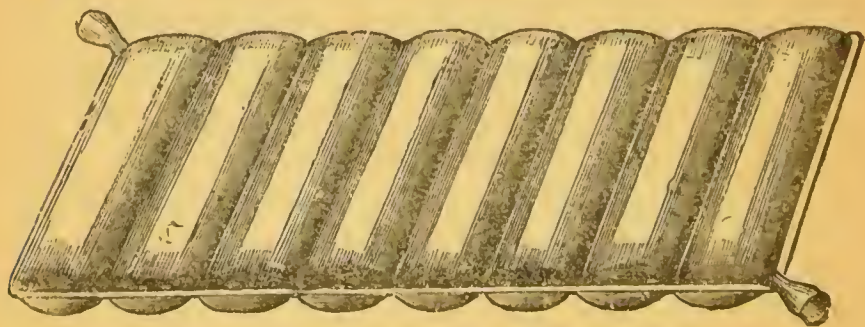
by the four corners. Bed linen, I may here note, should always be warmed and aired before being placed on the bed, and dampness thus guarded against. To test for this dampness, place a small hand mirror between the sheets, half-way down the bed, and allow it to remain there for half a minute. If the bedding be damp, the glass will then appear wet or clouded, whereas, if the glass remain still clear, the bed is sufficiently aired.

To change the sheets when the patient is in bed is a much simpler task than is commonly supposed, and one which can



be performed without much trouble or discomfort. First turn the patient on his side with his back towards you, and proceed to roll the soiled sheet lengthwise towards him from the edge of the bed. When you have rolled it as far as the patient, take the clean sheet, previously rolled lengthwise, and having tucked the side of it under the edge of the mattress, unroll it towards the patient. You will then have both rolls, as in the figure, close to the patient's back. He may then be rolled round on his other side, a proceeding

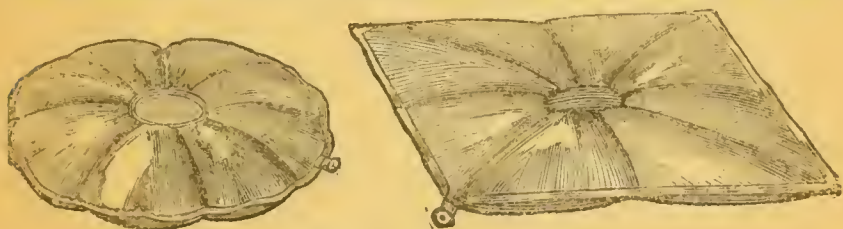
which will place him on the clean sheet. Remove the soiled sheet, and continue unrolling the fresh one. This plan may also be followed without turning the invalid, the nurse simply placing the hands under the patient from the opposite side, and pulling the two rolls through. The patient may be able to raise himself slightly to assist this procedure. In helpless cases the invalid lift is of great service in the renewing of sheets; or the nurse and another assistant may improvise such a lift, either by means of the soiled sheet, which can be afterwards pulled away, or by joining hands under the shoulders and hips of the invalid, and thus raising him until the rolls are pulled through. Top sheets and blankets should also be unrolled or unfolded upon the bed, thus obviating the draught and annoyance caused by simply throwing them over the patient, and thereafter adjusting them.



It may here be noted that pillows of woven wire have recently been introduced, and are very serviceable in many cases. They are springy and yet firm, and as they permit the free passage of air through them, coolness to the head is secured.

Water and air beds are much used in many forms of illness, more particularly in general paralysis or spinal cases where bedsores form, or have a tendency to form. Water beds are to be preferred, and can be hired very moderately from manufacturers or nursing institutions. When the re-

filling of the water bed is necessitated, the patient must either be raised by means of the invalid lift, or removed with the aid of a sheet improvised as a stretcher to another bed or couch. The water bed is then emptied, and is refilled with warm water when in position. Never fill it elsewhere and attempt to place it *full* upon the bed. See, too, that



no leaks are apparent before the invalid is placed upon it. Pillows and cushions of the same material are made in all shapes and sizes, and should be filled in the same manner. Very small ones, however, can be filled anywhere, as they are readily carried about without danger of injury. Such pillows are shown in illustrations.

III.—INFECTION AND DISINFECTION.

THE GERM THEORY—INFECTION—INFECTIOUS DISEASES— DISINFECTION—FUMIGATION.

“Frantic with fear they sought by flight to shun
The fierce contagion.”—*Armstrong*.

IN infectious ailments the duties of the attendant are of necessity considerably increased, and it will be well for you to have a general idea of what contagion is and by what means such diseases assume their frequent epidemic form. Only thus will you be able to effectively combat their ravages, or intelligently carry out the instructions of your physician regarding them. A contagious or infectious disease is one which is communicable from one individual to another, which is, in common *parlance*, “catching.” The methods of such communication are various, and in this connection a technical distinction has been drawn between “contagion” and “infection.” The one was taken to refer to diseases communicated by actual contact with the diseased surface, the other to those disseminated through the air or other medium. For all practical purposes, however, the terms are synonymous. Each infectious ailment is caused by a living particle or germ, which is termed a *microbe*, so infinitesimally small that only by means of high-power microscopes and special methods of colouring are many of them visible. To give some idea of their minuteness, let us suppose a man placed under a microscope capable of magnifying, say, 3000 or 4000 diameters. He would appear three or four miles in height. A microbe under the same lens might not exceed in size the period at the end of this sentence. It would be impossible in such a work to attempt any detailed elucidation of bacteriology or the germ theory of disease. A few main points must suffice.

These microbes or micro-organisms are of various kinds, belonging almost exclusively to the fungus tribe, and classed according to their shape and form as *bacteria*, *bacilli*, *spirilla*, *micrococci*, and *vibriones*. The term *bacteria* has been used in the widest sense to include all micro-organisms, though its proper application is to a class of rod-shaped microbes each about $\frac{1}{10000}$ of an inch in length. These germs thrive best in a moist, warm atmosphere; foul air and water assist their growth. They penetrate everywhere, the air around us is full of them, and wherever they find a suitable nidus or resting-place there they settle and prosper. Some classes give rise to our common contagious diseases, others create decomposition and putrefaction, others induce fermentation; while the mouldy fungus, too often seen on damp walls and in dim, badly-ventilated apartments, is due to the growth and propagation of a specific germ. Infectious diseases, then, such as the specific fevers of scarlatina and measles, are transmitted from one person to another by contact with the germs which originate them, and each variety of micro-organism gives rise to its own particular disease. Grapes cannot be grown from thorns, nor figs from thistles; and similarly, measles cannot be induced by a smallpox germ, nor will the virus of scarlatina give rise to typhus or diphtheria. The germs enter the system by various channels—by the throat and lungs, as in scarlet fever and smallpox; by the bowels, as in cholera and typhoid; by the skin, as in hydrophobia and erysipelas. After their entry a certain period—variable according to the species of germ—elapses before the onset of the resulting symptoms; this “hatching” period is known as *the period of incubation*. During the course of the disease these microbes multiply in the system with amazing rapidity, and are subsequently shed in various ways—by the skin, in scarlatina; by the stools, in enteric fever and cholera; by the breath and sputum, in diphtheria. The germs thus

given off are capable of inducing the same course of symptoms when absorbed by other individuals, this constituting infection. Some lose their effects rapidly by contact with fresh air, oxygen being to them as deadly as it is essential to our existence. Others adhere with remarkable tenacity to clothing, bedding, furniture, etc., and are so carried to fresh fields of invasion, spreading disease wherever they are exposed, and among all with whom they come in contact. A prisoner at the Old Bailey in London in 1750, to all appearance in good health, infected with typhus fever no less than forty individuals who were present in Court. An interesting case, too, was reported over 50 years ago by Dr. Parr, of Exeter. "The last plague," he says, "which infested the town arose from a traveller remarking to his companion that in a former journey he had the *plague* in the room where they sat. 'In that corner,' said he, 'was a cupboard where the bandages were kept; it is now plastered, but they are probably there still.' He took the poker, broke down the plastering, and there found them. The disease was soon disseminated and extensively fatal." Milk is a frequent vehicle for the germs of scarlet fever. Quite recently an epidemic, implicating over 700 individuals in a district of Glasgow, was directly traceable to the milk supply from one farm in the country a few miles distant. A French authority states that thirty per cent. of infectious diseases are due to domestic pets, cats, dogs, etc., carrying and distributing the germs. That flies do so is well known; and even letters forwarded to distant parts have carried contagion thither, and have spread disease and death. The experiments of Prof. Uffelmann, of Rostock, have shown that even cholera bacilli may be conveyed by the postman. This investigator infected an ordinary letter with bacilli, put it into a postbag, and found the organisms still active twenty-four hours later. Even on postcards they existed twenty

hours. The necessity, therefore, for thorough cleanliness is apparent. Fresh air is an excellent germicide, foul air and filth only result in forming for those microbes a suitable breeding ground. Attention to general health also is a grand preventive, for there is no more fitting habitat for disease than a weak and debilitated system. Bacon, who knew little if anything of germs, has said, "In infection and contagion from body to body, the infection is received many times by the body passive, but yet is, by the strength and good disposition thereof, repulsed." Our extensive knowledge of bacteriology confirms the statement of this philosopher. Where infectious disease occurs, however, you must use every available means of preventing its spread, and those means are included under the general term *disinfection*, regarding which something will presently be said.

A list of the more common diseases known to be of microbic origin may be of service. They are:—

Scarlet Fever.	Typhus Fever.	Mumps.
Measles.	Enteric Fever.	Influenza.
German Measles.	Relapsing Fever.	Cholera.
Whooping Cough.	Puerperal Fever.	Plague.
Smallpox.	Hay Fever.	Erysipelas.
Cowpox.	Ague and Malarial	Hydrophobia.
Chickenpox.	Fevers.	Pyæmia.
Diphtheria.	Yellow Fever.	Septicæmia, or general
Croup.	Tuberculosis.	blood poisoning.

The term *epidemic* is applied to an infectious disease which spreads indiscriminately, as did the influenza scourge two winters ago; it is *endemic* when confined to a certain locality, district, or class; and *sporadic* when odd cases crop up without spreading to any extent. The term *zymotic* has been used to include the specific infectious fevers, such as scarlet fever, measles, typhus, typhoid, and small-pox; while the substantive *zyme* has been applied to the poison from which they originate.

The following table shows, approximately, the infective period of the more common infectious fevers, during which time, therefore, the patient should be in quarantine :—

Scarlet Fever,	..	Till all desquamation has ceased ; usually about eight weeks.
Measles, ..	..	Till all desquamation has ceased ; usually three to four weeks.
German Measles,	..	Two to three weeks.
Mumps, ..	..	Till all swelling subsides ; usually two to three weeks.
Whooping Cough,	..	Till spasmodic cough ceases ; average about two months.
Chickenpox,	..	Till all scabs have fallen ; generally four weeks.
Smallpox, ..	..	Till all scabs have fallen ; generally six weeks.
Diphtheria, ..	..	Till throat symptoms disappear ; from three to six weeks.
Typhoid, ..	..	Variable ; four to eight weeks or more.
Typhus, ..	..	Three to four weeks.
Erysipelas, ..	..	Till desquamation ceases ; three to four weeks.

DISINFECTION.

“Disinfection is a necessity ; in fact, it may be justly said that the first rule of household life is disinfect ; the second, disinfect ; and the third, disinfect.”

There are many strange ideas extant as to what constitutes a disinfectant. In disinfection we aim at destroying or rendering innocuous the germs of disease. To expect that a tub of water in a room, or a handful of charcoal under the bed, will effect this is absurd ; these and many similar suggestions are but the result of ignorance. And here I would ask you to note the distinction between disinfectants and deodorants. *Disinfectants* are substances which destroy microbes, their spores, and products ; *deodorants* destroy or hide foul odours without of necessity rendering their source inert ; *antiseptics* are used to prevent putrefaction or fermentation, arresting the growth and development of the germ. A true disinfectant must be capable of destroying both germs and spores ; it should be volatile, and so purify the air, and

it should be soluble, or miscible with water. Dr. George Wilson thus describes the properties of disinfectants :—

“Disinfectants may be described as agents which are intended to destroy the infective power of so-called disease germs, or, indeed, of any decomposing matter, whether existing in air, water, or other substances, which tend to produce disease. Some of them act as deodorants, by arresting decomposition, or as destructives, by their direct chemical action ; and the most efficient of them are endowed with all these properties, though in varying degrees.”

You will therefore understand that the best disinfectant is not necessarily that which will most disguise the odour of putrefaction, or has itself the most powerful smell. Many of the most efficient disinfectants are odourless. Some of the common disinfectants are :—

Carbolic Acid.	Permanganate of	Condy's Fluid.
Chloride of Lime.	Potash.	Burnett's Fluid
Sulphate of Iron.	Sulphurous Acid.	Izal.
Chloride of Zinc.	Iodine.	Creosote.
Corrosive Sublimate.	Sanitas.	Iodoform.
Jeyes' Purifier.	Chlorine.	

Sulphurous acid is obtained by the burning of sulphur ; chlorine by treating chloride of lime with a strong acid ; Burnett's fluid is a preparation of chloride of zinc ; Condy's fluid a preparation of manganate of potassium ; Jeyes' purifier is a creolin compound ; Sanitas, a compound of pine products, eucalyptus, thymol, etc.

In any infectious disease the quarantine of the invalid is the first step towards curtailing its spread. The patient should therefore be immediately isolated, and every precaution used to render that isolation as complete as circumstances will permit. The room should be stripped of all curtains and hangings, carpets, and all unnecessary furniture. No visitors or other members of the family should be allowed in the sick chamber. In Holland it is customary in such cases to warn visitors by tying a white rag round the handle of the door-bell ; in America it is common to see displayed without,

a red card in cases of fever and a yellow card for smallpox. Some such plan is certainly advisable in the interest of public health, although most inconvenient for the householders. At sea a similar law is enforced, all masters of vessels when entering a port being compelled, when disease is on board, to hoist the "yellow jack" or quarantine flag at the forepeak.

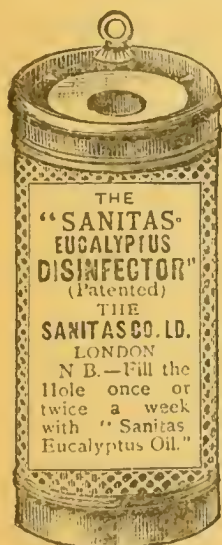


Everything in the room should undergo disinfection, such as wiping over with a cloth damped in disinfecting fluid. A sheet soaked in disinfectant solution, *e.g.*, carbolic acid, Sanitas, or chloride of lime, must be hung up outside the door. This must extend to the floor, so that no germs may find egress without encountering the action of the disinfectant. In using the ordinary chloride of lime great care must be exercised, for though a capital disinfectant and deodoriser, it is also a decoloriser, and thus has the disadvantage of bleaching and even destroying napery and wearing apparel. Select, therefore, an old sheet for the door, as it will be unfit for further service. In using carbolic acid the



ALLEN AND HANBURY'S
VAPORISER.

strength should be 1 in 20 parts of water of Calvert's No. 5 acid, which acid is most convenient for household purposes. The air of the room may be kept pure by the use of Calvert's Vaporiser, a handy apparatus illustrated on p. 44. Carbolic acid placed in the cup is, by the heat of the candle, thrown off in a vapour which permeates the room. Jeyes' Spray Diffuser is also useful, while another cut shows Allen & Hanbury's Cresolene Vaporiser on the same principle. For



Sanitas preparations the Sanitas Disinfector and Fumigator are valuable, and these may be kept going day and night. The former is an automatic appliance for the continuous purification of the air, and only requires occasional refilling. The fumigator, as seen in the drawing, is an elaborate apparatus on the same principle as the vaporisers referred to. Sanitas fluid or carbolic solution should be sprinkled on the floor; all evacuations from the patient, even the sputum, should be treated with chloride of lime or crude carbolic acid. All paper, scraps, and refuse from the sick-room should be burned, and all utensils rinsed after use in Sanitas

solution. In scarlatina or measles the skin of the patient should be occasionally rubbed with carbolic solution, Condyl's fluid, Sanitas fluid, oil, or jelly. All in the house should use a disinfectant soap. All clothing or bed-linen used in the room either by invalid or attendant should be thoroughly purified by carbolic solution, thereafter should be boiled, and allowed, when possible, to lie for a time in the open-air. Sinks and closets are kept pure by a solution of copperas (sulphate of iron). This in the proportion of one pound to four gallons of water, poured down a sink or drain will cleanse and deodorise it.

In all cases it is inadvisable to inhale the patient's breath, more particularly in scarlet fever and diphtheria. These are infectious through the breath, cough, spit, or even kiss of the invalid. In connection with the last mentioned the sad case of the late Princess Alice will be borne in mind.

FUMIGATION.

"Would thou preserve thy famished family ;
With fragrant time the city fumigate."—*Dryden*.

When the patient is convalescent, the sick-room should be fumigated, and all infectious germs thus destroyed, before others are permitted to enter. This may be done in several ways, the best being by means of sulphurous acid, or by chlorine gas. To generate the former place half a pound of sulphur (powdered) on a shovel, and place the shovel over a bath or pail of water in the centre of the room. This serves as a precautionary measure against fire. All keyholes, windows, and fireplace should be airtight during the operation, and the sulphur should be ignited by a piece of live coal. Then immediately vacate the room and close the door. When the air has been saturated with the fumes from the sulphur for about ten hours, all doors and windows should be thrown open and the apartment thoroughly ventilated for other ten hours before being used. The amount of

sulphur necessary will depend upon the size of the room. Use half a pound on each shovel, and one pound for every 1000 cubic feet of space.

Another method is given as follows :—

“Take a dish pan and place a flat plate in the bottom of it, and on this set a kettle containing the proper amount of sulphur mixture—equal quantities of powdered sulphur and charcoal. Fill the pan with water so that it will come half-way up on the kettle. Then turn alcohol or benzine on to the mixture, ignite, and get out of the room as speedily as possible. Two or three ounces of alcohol will be sufficient for several pounds of sulphur The object of using water is that the heat of the kettle will cause evaporation and send moisture into the room ; this forms sulphurous acid.”

The above method is advised by a writer as preferable to dry sulphur, the extra moisture assisting to generate the necessary acid vapour

Johnson's fumigator is a safe means of burning sulphur in a room, being put up in special fireproof boxes, which do not become red hot. The tip is then ignited, and sulphurous acid is given off. The Sanitas Company have also a sulphur candle which serves the same end.

Chlorine gas is generated by placing a teaspoonful of black oxide of manganese with four teaspoonfuls of ordinary salt in a saucer. Pour on this a few drops of oil of vitriol, and leave in the room for twenty-four hours. This quantity should suffice for any room, as the gas is exceedingly poisonous to microbes. The ventilation of the room should follow as already noted. All clothing and bedding must also be purified ; means are usually found for doing this by the Local Health Authorities. A very efficient method used by most authorities is simply heat, the clothing, etc., being subjected to a very high temperature, sufficient to prove fatal to both microbes and spores. While disinfecting your room, however, anything placed therein will also be purified, and rendered non-infectious.

IV.—THE NURSE.

"Let constant vigilance thy footsteps guide,
And wary circumspection guard thy side."—*Gay.*

"A good nurse should be the 'Sermon on the Mount' in herself."
—*Florence Nightingale.*

BEFORE referring to what has been termed the "details of nursing," a few hints might be appropriate as to the attendant herself, and the qualifications essential to the ideal nurse, which she should strive to cultivate and develop. Brief reference has been made to some of those qualities in the prefatory chapter; but many little points, in addition, are worthy of note. The nurse is constantly called upon to exercise good sense and good humour; readiness of mind, as well as readiness of hand; energy and activity; prudence and forethought; gentleness and never-failing patience. She must, in truth, possess

"The reason firm; the temperate will;
Endurance, foresight, strength, and skill."

She must be *strong* and *healthy*. A delicate woman cannot bear the mental and physical strain which the duties may entail upon her—the confinement to house or room—the loss of rest and sleep. Health is, therefore, indispensable. She must be *amiable* and *obliging*, and, above all things, *sympathetic*, "her hand the agent of her heart." The manner in which many little duties are performed may oftentimes materially increase or lessen their value. The nurse who proceeds to dress the foul-smelling sore with her handkerchief to her nose, or wearing a look which indicates disgust, has, without doubt, mistaken her vocation. The face must never be allowed to reflect the feelings; even should symptoms arise—such as sudden increase of pulse or temperature—which may cause you a little anxiety or alarm, do not

allow your charge to suspect such anxiety. The feelings of the patient must be studied, even in such small matters.

“ Since trifles make the sum of human things,
And half our misery from those trifles springs;
Oh ! let the ungentle spirit learn from thence,
A small unkindness is a great offence ;
To give rich gifts, perhaps, we wish in vain,
But all may shun the guilt of giving pain.”

The nurse must be *self-denying*. Sick people are proverbially unreasonable and ill-natured, captious and fretful in the extreme. Many patients during an illness have only consideration for themselves, and no thought for the trouble, oftentimes unnecessary, which they continually entail upon others. Allowances must always be made for such infirmities ; and the nurse must bear with the whims and notions peculiar to most invalids, without herself becoming fretful or irritable—without appearance of worry or annoyance. It has been truly said that, to be a perfect nurse, one almost requires to have passed through a severe, and, perhaps, lingering illness ; otherwise it is all but impossible to understand and treat sympathetically the various stages of disease and recovery. “ It seems ludicrous to think of a usually vigorous man brought to the verge of tears, because he had to wait five minutes for an expected cup of beef-tea ; or of a gentle and refined woman flying into a rage, because a towel had slipped from the screen on to the ground. Yet these, and a hundred other curious incidents, are what must be looked upon as matters of course when the body is off its usual balance, owing to acute or prolonged illness. Do we not frequently see persons in perfect health furiously bang the door against which they have accidentally hurt themselves ? and how sympathetically, therefore, should we tend those who are unnerved and unstrung, and whose temper and spirits are in some measure beyond their control.”

The nurse must be *able to talk, and refrain from talking,*

as the case requires. A "gossip" should never be permitted near the sick bed. But when a patient becomes dull and morose, as patients will do from constant lying in bed, or even confinement to one room without change of scene, the conversational powers of an intelligent nurse go a long way towards relieving the monotony, and possibly the suffering, of her charge. A sensible attendant, however, will, in such conversation, refrain from discussing the illness or treatment of the patient; from detailing experiences or reports of similar cases which she may have seen or heard of, or whether they resulted well or ill. Topics of this nature should never be mooted, and all conversation avoided which tends to excite the invalid or even to make him thoughtful or sad.

The nurse must be *calm*, and *self-possessed*; *exact*, *methodical* and *punctual*. Fussiness results invariably in uneasiness and discomfort for the patient, if not in positive injury; while much depends, in many cases, upon this method and regularity. With it, everything proceeds smoothly, without annoyance or worry; upon it hangs much of the ease and comfort of life: without it, there is continual fretting over less work done. There are those who, intent on great accomplishments, confuse and rush, and so mix their duties that in the end the performance disappoints the promise. Regularity, on the other hand, multiplies one's efficiency, and much more work is more satisfactorily accomplished.

The nurse must be *attentive*: attentive to the requirements of the patient, to the proper condition of his surroundings, to the instructions of the physician, whose assistant for the time being she virtually is. Doctors like to see a *smart* and *obedient* attendant—quick to grasp and understand details—to whom they can give instructions without fear or anxiety, and on whom they can depend to give a satisfactory and

reliable account of the invalid. The nurse should also be *observant*. Many little points with reference to the condition of the patient, which it is essential the physician should be cognisant of, are, of necessity, left for the attend-

ant to note and report upon. Unless, therefore, she has cultivated the faculty of careful observation, many little noteworthy details may escape her altogether. She should be *quiet* and *unobtrusive* in dress and deportment; not fond of showy, rustling dresses, which pall upon the sufferer; obeying implicitly instructions given her, without attempt to foist *her* views or *her* opinions upon the value of remedies. She must cultivate *prudence* — that virtue by which, as Milton has said, we discern what is best to be done under the various circumstances



of time and place; *forethought* — anticipating the requirements of patient and physician, having all requisite material at hand, avoiding discomfort and delay; *gentleness* and *kindness* the prerogatives of a loving nature. Lastly, she

should be *clean* and *tidy*, careful about herself, her patient, and their surroundings. For professional nurses clean hands, clean white cuffs, clean white apron and cap, are *de rigueur*; there is no reason why the home nurse should not follow this example. This scrupulous attention to cleanliness and neatness has oftentimes a wonderful effect upon the sufferer. On the other hand, the nurse negligent and untidy about herself cannot be otherwise about the invalid; and what more likely to annoy and irritate the sensitive patient than the dirty hands or foul breath of the attendant who serves his food, or the loss in the bed of the carelessly stuck pin by the slovenly and untidy nurse?

Such, then, are the qualifications requisite to the aspirant to the ideal nurse. The majority are, or are generally supposed to be, the special attributes of your sex, and all are essentials which are not to be lightly looked upon or despised. Knowledge is certainly of importance; but one pound of learning requires ten pounds of commonsense to put it into practice. And she who is not possessed of such qualities as are enumerated, had better far not undertake a duty which may only end in injury to the sufferer, discomfort for herself, and general uneasiness to all around.

MISCELLANEOUS HINTS.

Never wear rustling dresses, nor creaking boots or shoes.

Always have your meals served in another apartment; not in the sick-room.

Secure regular hours, if at all possible, for rest and for exercise.

Never stand behind or out of sight of the patient while talking to him.

Don't whisper or speak in undertones in the sick-room.

Do not sit on the patient's bed; take a chair at the bedside.

Don't be over anxious ; it is more harmful than otherwise ; the over anxious child pulled up the plant to make sure the roots were growing.

Always note down in writing the instructions you receive from the doctor.

Wear gutta-percha slippers, which are noiseless.*

Give as little trouble to the servants as possible ; many nurses make much more work than necessary ; be willing, if need be, to wait upon yourself.

Always be at hand during the doctor's visit ; have everything ready which he will require, and have your report open for his inspection.

Avoid staring at your patient ; watch him without his knowing it.

"Give your tongue more holiday than your hands and eyes."—*Rabbi Ben Azai.*

"Resolve to perform what you ought ; perform without fail what you resolve."—*Dr. Franklin.*

"Sum up at night what thou hast done by day,
And in the morning what thou hast to do."

—*George Herbert.*

"To be free-minded and cheerefully disposed at houres of meat and of sleep and of exercise is one of the best precepts of long lasting. As for the passions and studies of the minde:—Avoid envie ; anxious feares ; anger fretting inwards ; subtill and knottie inquisitions ; joyes and exhilarations in excess ; sadness not communicated."—*Francis Bacon.*

* These may be obtained from North British Rubber Co., Buchanan Street, Glasgow, and Princes Street, Edinburgh.

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No.

V.—OBSERVATION OF THE SICK.

“I took a just account of every observable circumstance, from the surface quite down to the bottom of the pit, and entered it carefully in a journal.”—*Woodward*.

“He alone is an acute observer who can observe minutely without being observed.”—*Sterne*.

THE “details of nursing” now claim attention, and under “details” are comprised the many little duties in connection with the invalid which the nurse is expected to perform, such as the administration of foods and the preparation and application of remedies. Those multiform duties may be classed for convenience under appropriate headings, and first, I will refer to those included under “observation of the sick.”

I have already mentioned that many points which may be of importance to the attendant physician are left for the nurse to watch and report upon. The doctor cannot be expected, except in very critical cases, to remain by the bedside of the patient and watch for himself every little change in the condition. The intelligent and observant nurse must, therefore, act as his deputy, and record for his information all that transpires during his absence. She will require to note the patient’s pulse, temperature, and respiration, the condition of the skin, the nature of the excretions, the amount of sleep obtained, the quantity of nourishment taken, the doses of medicine administered, the nature and locality of any pain experienced.

The written record of such details is known as the nurse’s “report.” In order to present a satisfactory report she ought to have a pass-book for the purpose, with a double page appropriated to each twelve hours. Here each item should be noted as it occurs, so that the physician by scanning the report may find at a glance the general condition of the patient

during his absence, the quantity of nourishment taken, and the amount of rest secured. The following will sufficiently indicate the general lines of such a report:—

Patient's Name, *Date*,

HOUR.	GENERAL NOTES.	REMARKS.
8 a.m.	Temperature, 101 deg. ; Pulse, 100 ; Respiration, 21.	Patient had a favourable night, slept much after 2.30 a.m., and seemed to have slight pain only in spasms.
8 30 a.m.	Tablespoonful of medicine.	
9 a.m.	A teaspoonful of Valentine's Meat Juice in two ounces of milk.	
10 a.m.	Patient asleep.	
12 noon	Tablespoonful of medicine.	
12.15 p.m.	Cup of Invalid Bovril ; one Granola Biscuit.	Doctor visited and ordered so-and-so.
12.30 p.m.	Bowels moved freely ; motion streaked with blood.	
1 p.m.		
2 p.m.	Temperature, 100 deg. ; Pulse, 96 ; Respiration, 20.	
2.15 p.m.	Cup of chicken tea and slice of toast.	
3 p.m.	Suppository administered.	Patient complains of severe lancinating pain in wound.

Such is but an outline of a nurse's report. And now to refer to the points to be noted a little more in detail.

TEMPERATURE.—The nurse will take the patient's temperature night and morning at a regular hour, or oftener if the physician requires or any necessity arises. This is done by means of a self-registering clinical thermometer, which is shown in illustration. The bulb is adapted for application to the patient's body, and there is a graduated scale for measuring the height to which the column of mercury will rise. This scale is marked off in Fahrenheit degrees, which are again divided into tenths, so that the temperature is read as so many degrees and so many decimals. An arrow is placed at the normal point, viz., 98.6 degrees. When

taking the temperature, see first that the column of mercury is under the 95 degrees mark ; if not, it must be shaken down either by a swing of the arm or by knocking the wrist

against the other hand, the thermometer in each case being firmly held between the finger and thumb. The bulb is then placed in the patient's armpit, and retained there by placing the arm close to the chest ; cover the patient with the bedclothes, and allow the thermometer to remain ten minutes. Some patented instruments register in one minute ; others in half a minute ; better allow ten minutes, however, for ordinary thermometers. In self-registering instruments, the register will not fall on being removed from contact with the body, but will maintain the maximum height. On removing it, read off this height on the scale, and note it in the report, or on the temperature chart. Temperature charts in serious cases may be prepared for the purpose.

Some advise taking the temperature by placing the bulb under the patient's tongue : this is hardly a pleasant method, apart from the danger of breaking by the teeth. In exceptionally weak cases it may be resorted to, in order to save the exertion. In young children the best place is the inside of the thigh, as you have more command over the child,

and can use the instrument with less liability to damage from the inevitable restlessness. The bowel has also been used, but



in ordinary cases this is inadvisable. In applying to the armpit, first wipe the instrument and dry the skin; raise the arm and place the bulb well into the centre of the armpit. Then close the arm by the side, with the forearm across the chest, and ask the patient to hold the elbow close with the other hand. Be careful to place the instrument into the armpit and in contact with the skin—not into a nice hot poultice, as has been done, and thus secure a register of 140 degrees! The normal temperature of the body, as already stated, is 98·6 degrees, taken in the armpit. Taken in the *rectum*, as the lower part of the bowel is termed, it is usually half to one degree higher. The following table illustrates the significance of various temperatures:—

Collapse, anything near or below,	..	95 degrees Fah.	
Abnormally low	.. .. .	96·8	„ „
Subnormal,	.. .. .	97·5	„ „
Normal,	.. .. .	98·6	„ „
Subfebrile,	.. .. .	99·5	„ „
Slightly febrile,	.. .. .	100	„ „
Moderately febrile,	.. .. .	102	„ „
Highly febrile,	.. .. .	104	„ „
Dangerously febrile,	.. .. .	105	„ „
Hyperpyrexia,	.. .. .	106	„ „

Surface thermometers are used to test the local surface temperature of any part. They are simply placed against the part to be tested, and held there until the column of mercury—spiral in the case of surface thermometers—ceases to rise. They are not, by any means, frequently used; but may be serviceable in special cases.

PULSE.—The pulse must also be noted regularly. Place three fingers on the radial artery at the wrist—the physician will show you exactly—and count the number of impulses per minute using the second-hand of a watch to note the time. These impulses denote the number of contractions of the heart, and are communicated through all the arteries of

the body. The radial artery is usually chosen, as being handy, and the artery at this point very superficial. It may also be taken, however, by the pulsations of the artery in the temple. In feeling the pulse, not only the number of beats, but also their character and regularity, may be noted. The following is the average pulse-rate at various ages :—

New-born infants,	..	..	130 to 140 per minute.	
During 1st year, ..	..	..	115 to 130	„
During 2nd year, ..	..	..	100 to 115	„
During 3rd year, ..	..	..	95 to 105	„
From 7th to 14th year, ..	..	..	80 to 90	„
From 14th to 21st year, ..	..	..	75 to 85	„
From 21st to 60th year, ..	..	..	70 to 75	„
In old age, ..	..	..	75 to 85	„

The pulse is slower at night and during sleep. Increased pulse-rate indicates feverishness. Irregular or intermittent pulse indicates some systemic disturbance.

RESPIRATION.—Note also the respirations, their character and rhythm. In the healthy adult the normal rate is from 16 to 20 per minute. The *pulse-respiration-ratio* is four to one : increase of the one is usually accompanied by a corresponding increase of the other. To count the respirations, you may place the hand lightly upon the lower part of the chest, and note how often it heaves. Do not let the patient understand, however, your object in doing so, as this knowledge will almost certainly interfere with the involuntary breathing. Rather place the hand upon the wrist as if noting the pulse, and let your eye note the heaving of the chest. This throws the patient, as it were, off his guard. It is a peculiar fact that you cannot breathe in the natural free-and-easy manner if you are aware your respirations are being counted. Besides the rate, note the character of the breathing ; if difficult or laboured, shallow or feeble, irregular, attended with pain, crowing, or snoring, or accompanied by gurgling sounds.

Note the state of *the tongue*. As a general rule, the physician attends to this, but you ought to be aware of what points to note in the examination of the tongue. In health the tongue is clean and moist, soft and apparently pliable, round at the edges, and having no prominent spots or papillæ. Any deviation from this normal standard is noteworthy—whether it be dry or flabby, abnormally red or covered with bright red spots (as in scarlet fever, forming “the strawberry tongue”), or coated with a white, yellow, or brownish fur.

Watch the condition of *the skin*, whether pale, livid, or yellow, harsh and dry, soft and perspiring, hot or cold or clammy. Is there any eruption evident? If so, note its nature, extent, and duration, if evanescent. *Rigors* or shivering fits must be particularly noted. A *rigor* is the result of some nervous disturbance, and presents certain well-defined characteristics which you should know. There is a general shivering or trembling, even to chattering of the teeth, and the patient experiences a sensation of chilliness. The limbs feel cold, and the face and hands may be of a more or less livid hue. The skin is dry; respiration increased, but feeble; pulse rapid, but weak; and temperature raised. There may be headache, sickness, pains, and possibly delirium. The treatment to be adopted in such emergencies will of necessity depend much on the nature of the case, and will be prescribed by the attendant physician, whose instructions should be accurately carried out, and whose orders should be rigidly enforced.

Note the *cough*, if any be present, its character and frequency. If there be spit, reserve this for the doctor’s inspection. Give the patient a little mug, preferably with a cover, and have a small quantity of water in it. Into this he may spit, the nurse thereafter covering it over until it is again required. Note also if there be *pain* during the cough, or pain complained of at any time in any part of the body; its

exact locality, and the nature of the pain, whether sharp and lancinating, aching or throbbing, dull and heavy, constant or paroxysmal, shooting or stationary. Watch and report upon the *posture* of the invalid, which in many cases is of much importance in diagnosis. The patient may spontaneously adopt certain positions in order to relieve a pain or ease discomfort. Such alterations must be carefully noted. They *may* not be of much import, but that is for the doctor to decide.

SLEEP.—Not only the duration of each sleep the patient obtains, but also the character of it should be recorded, whether deep or light, quiet or restless, or troubled. And here it may be noted that the patient should never be aroused out of a sound slumber for any purpose, unless under special instructions from the physician. Even for the administration of the regular nutriment it is inadvisable to wake the sleeping invalid, the gain to the system from the repose being, as a rule, of much more value. Sleep is Nature's grand restorative, the "chief nourisher in life's feast," and is of more importance in many cases than diet. The nutriment may be administered thereafter in special form, which will more than compensate for the delay. "But he who sleeps, eats," runs the proverb. When the patient feels inclined to sleep, the nurse should make his position as comfortable as possible. Any constrained position will, as a rule, prevent sleep, or cause it to be restless and disturbed, while an easy position assists in wooing it.

Note also the patient's *appetite*, and whether or not he complain of *thirst*. It will depend much upon the nature of the case whether you may satiate this thirst with one of the many remedies in frequent use. If there be *vomiting*, always retain the vomited matter for the doctor's inspection; but do not retain it in the sick room, nor show it to the doctor there. Note also the nature of the vomit, its consistence

and colour, and whether it has any particular odour. The patient may also inform you of its being "sour" or "acid." In any emergency, a little piece of ice may be given to suck in order to allay the sickness, or a mustard poultice or Seabury's prepared Sinapism may be applied for fifteen minutes over the region of the stomach. *Hæmatemesis*, or vomiting of blood, is a symptom which demands the immediate summoning of the physician. It may be known by being dark in colour—"coffee ground" vomiting as it has been termed—and mixed with particles of food. The dark colour is due to the action on the blood of the acid juice of the stomach, this altering its character, and so rendering hæmatemesis easily distinguishable from *Hæmoptysis*, or spitting of blood. In the latter case, the pure red blood comes from the lung unaltered.

The *Condition of the Bowels* should be noted, and the time when they are evacuated. Note also the character of the motions, whether thin or watery, dark or light in colour, foul smelling, or mixed with mucus or blood. *Melæna*, or bleeding from the bowel, is a term properly applied to dark, tarry-like motions, due to the blood being altered in character by the intestinal secretions. There may be bright red blood in the stools, however, coming from piles or wounds at the lower end of the bowel. Certain medicines, such as preparations of Iron or Bismuth, alter the nature of the stools, and allowances must be made for this. In exceptional cases keep the motions for the doctor's inspection, but as with the vomit, out of the sick room. Keep in a covered bed-pan, or night stool.

The *Examination of the Urine* is an important factor in diagnosis of disease. You will therefore note the time of micturition, and, where possible, the quantity of urine voided in each twenty-four hours. Note whether there be pain or difficulty in passing it, its appearance, whether clear

or smoky or muddy, high coloured or pale, or leaving a deposit on standing. If the doctor wishes a sample for further chemical testing, fill a four-ounce bottle with the urine passed in the morning, cork it well, and place on the bottle a label thus :—

SAMPLE OF URINE.

Patient's Name,.....Date,.....

A few of the simple tests to which urine may be subjected are added here, as they may be of service in special cases where the physician wishes each sample tested on being passed.

QUANTITY in 24 hours.—From 40 to 50 ounces in health.

COLOUR.—Amber or pale straw.

SPECIFIC GRAVITY from 1'015 to 1'025.—This is taken by means of a special instrument termed a *Urinometer*, and the physician will explain its use in cases where it is required.

REACTION is slightly acid, but easily affected by diet or medicine. The reaction is tested by means of little slips of litmus paper, which are dipped in the urine.

Acid Urine turns Blue Litmus paper Red.

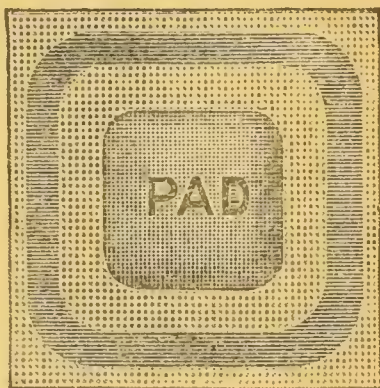
Alkaline Urine turns Red Litmus paper Blue.

Neutral Urine leaves both papers unaltered.

The only other test you may be called upon to perform is that for the *presence of Albumen*. A little urine is poured into a test tube, and a drop or two of Acetic Acid added. It is then boiled over the flame of a spirit lamp, and if it becomes thick or cloudy, add a drop or two of Nitric Acid. If it remains cloudy then Albumen is evidenced.

BEDSORES.—These are apt to occur in bedridden patients, in different forms of paralysis, etc. They may be unavoidable, but in by far the majority of instances they are due to negligence or carelessness on the part of the attendant. They have been described as “a protest against bad nursing,” and they certainly are so in 95 per cent. of cases.

To avoid them, absolute cleanliness, scrupulous attention to the bedding, and frequent changes of the invalid's position are necessary. If the sheets become wet or ruck up under the patient, bedsores are most surely courted. "Prevention is better than cure," and the observant nurse will at once detect and report the premonitory redness which indicates their formation, and will be able to act accordingly. They are most common on those parts of the body which press most on the bed—such as the hips and shoulders, and the lower end of the spine. These the nurse should, more especially in delicate and long-standing cases, most carefully watch, sponging regularly, and thereafter thoroughly drying the part. If any suspicious redness appear, the part should be protected by means of a special air or water pillow, or by a circular pad round the spot to relieve the pressure. Such a pad may be formed of a thick layer of cotton wool



with a hole in the centre for the reception of the sore spot. The tender part is thus shielded from pressure or friction. An excellent appliance for this purpose is the "Leicester Bedsore Pad," manufactured by A. De St. Dalmas & Co., of Leicester. This is shown in the accompanying cut, and consists of a pad of absorbent cotton wool in the centre, with a self-adhesive border, so that anyone can apply it to the affected part. The pad of cotton wool shields the wounded surface from injury. They are made in several sizes. The part should also be regularly rubbed with Eau de Cologne, spirits, or spirituous lotion, in order to harden the skin. Dusting with a powder composed of equal parts of zinc oxide

and powdered starch, or with boracic acid powder, will, in the earlier stages, prove beneficial. Once the skin breaks, however, the greatest care must be exercised ; for bedsores, once formed, are very difficult to heal. They will require frequent dressing, according to the physician's instructions, with whatever preparation he may prescribe, and must be protected by means of a pad or pillow, or even by means of an air or water bed. Special air and water pillows, with an opening in the centre, are used for this purpose, while the use of a water bed is the best preventive. These latter have been already referred to, and are much softer and less irritating to the parts of the body which press on them.

VI.—APPLICATIONS AND REMEDIES.

"The physician or surgeon orders what is to be done ; *training* has to teach the nurse how to do it to his order."—*Florence Nightingale*.

WITH the correct method of preparing and applying the more common remedial agents, such as poultices and fomentations, every lady should make herself familiar. Very much depends upon the method of preparation whether or not the application will serve the purpose for which it is intended. Poultices, for example, which are thick and heavy, may, in some cases, result in more harm than good. But the instruction received by the attendaht will simply be to "put on a poultice," the doctor taking it for granted that every lady who takes upon herself the duties of nurse will know exactly how to make and apply it. This chapter will be devoted, therefore, to detailing a few of the remedies in common use, and the manner in which they should be prepared.

POULTICES.

Poultices or *Cataplasms* are of various kinds for various purposes, and may be used either dry or moist. They may be classified as follows :—

1. Simple poultices, as bread and linseed meal, used for the purpose of applying heat and moisture.
2. Sedative poultices, as chamomile and hemlock, used to allay pain.
3. Disinfectant poultices, as charcoal, used, as their name implies, to destroy germ-life, or counteract its noxious effects.
4. Irritant poultices, such as mustard, used as counter irritants.

Poultices, too, may be used hot or cold, according to the substance employed in their preparation, and the effect

desired. When preparing a poultice, have everything you are likely to require ready before you begin, and do not remove the old poultice until the new one is ready for application. This rule applies to every kind of poultice.

The most common poultice is that of *linseed meal*. For this purpose the best substance is "crushed linseed" before the oil has been expressed from the seeds. A perfect poultice should be light, as hot as the patient can bear it, and of uniform consistence throughout. It should not be so thin that it runs over the cloth, nor so thick that it soon becomes dry and hard. It must be of such a consistence that when made it turns out of the bowl, leaving it perfectly clean. To prepare it, have at hand your bowl and linseed, *boiling* water—not water which *has been boiling*—the linen on which the poultice is to be spread, a piece of flannel, and a knife. First have the bowl heated by pouring boiling water into it, or allowing it to stand in the oven. Pour into this heated bowl sufficient boiling water for the poultice, sprinkle in the meal, and stir gradually with a knife till you have the mixture of the consistence of dough. Then turn it out and spread, having the poultice about half an inch in thickness. A paper knife serves best to stir and spread with, and the edges of the linen should then be turned over the edges of the poultice. After the poultice is ready, a little hot olive oil may be spread over its surface before it is applied—this will depend upon what the application is used for. It should be applied very hot, and this heat retained by covering with a piece of flannel, or a piece of mackintosh, or even a sheet of cotton wool. The following points are worthy of note. Always sprinkle the meal into the water, never add the water to the meal. Don't allow the poultice to become cold before you apply it, and never use a poultice a second time. Poultices heated over again are never so good; boiled linseed poultices are also bad. Renew as soon as cold, unless

specially ordered by the physician when to apply them and how long to keep them on. The great physician Abernethy remarked that poultices were either the greatest blessing or the greatest curse, and whether they prove the one or the other will depend much upon the method of preparation. The following is the St. Thomas Hospital recipe for a good poultice :—

“Make the poultice-basin thoroughly hot. Put in as much boiling water as you think will be required, throw in the meal quickly and lightly with the left hand, stirring all the time with a large spatula (previously made hot) held in the right hand.”

To prepare a large poultice the following useful directions are given by Dr. Brunton :—

“A flannel bag should be prepared of convenient size. This should be closed at three edges and open at the fourth. One side of it should be about one inch or one inch and a half longer than the other, and it is convenient also to have four tapes attached at the points which form the corners when the bag is closed, in order to keep the poultice in position. Besides this, another strip of flannel should be prepared of the same breadth as the length of the bag, and long enough to wrap around it once or oftener. Crushed linseed, bowl and spoon should then be got together, and the spoon and bowl thoroughly heated by means of boiling water; the poultice should then be made with perfectly boiling water, and rather soft. As soon as it is ready it should be poured into the bag, previously warmed by holding it before the fire; the flap which is formed by the longest side of the bag should now be turned down and fastened in its place by a few long stitches with a needle and thread; it should then be quickly wrapped in the strip of flannel (also previously warmed) and fastened *in situ*, if necessary, by means of the tapes. It may be covered on the outside with a sheet of cotton wool. In this way the poultice may be applied boiling hot to the skin without burning; the two layers of flannel which are at first dry, allow the heat to pass very gradually to the skin; as the moisture of the poultice soaks through them they become better conductors, and the heat passes more quickly, but the increase is so gradual as not to cause any painful sensations whatever, but only one of soothing and comfort. The poultice also keeps much longer hot, and the necessity for changing it arises much less frequently.”

Linseed meal retains the necessary heat and moisture for a considerable time, hence its almost universal use in poultice-making. It is apt to irritate a tender surface, however, when continually used, more especially in cases of boils, sores, or ulcers, and little yellow spots begin to make their appearance all round the poulticed area. In such cases *bread poultices* are more bland, and less irritating to the skin. These may be made either with whole or crumbed bread. To prepare the former, remove the crust from a slice of stale bread; take a piece of this bread the required size and place it upon a saucer, pouring over it sufficient boiling water to cover it; then invert a plate over the saucer, and in a few minutes the bread will absorb all the water; turn it out on a piece of lint or linen, and either apply thus or covered with a piece of muslin, as the physician may direct. Poultices applied between layers of muslin are to be preferred, being much cleaner; otherwise parts of the poultice are apt to adhere and dry, which is extremely unpleasant, more particularly on the back of the neck, a favourite spot for boils and carbuncles. The hair in such cases becomes matted with the poultice, and causes much annoyance. To prepare a poultice of crumbed bread the following is Dr. Abernethy's recipe:—

“First scald out a basin; then, having put in some boiling water, throw in coarsely-crumbed bread, and cover it with a plate. When the bread has soaked up as much water as it will imbibe, drain off the remaining water, and there will be left a light pulp. Spread this a third of an inch thick on folded linen, and apply it when of the temperature of a warm bath.”

In the case of gangrenous sores, bread poultices made with port wine have been employed. They have been highly recommended by Sir Astley Cooper and other surgeons of eminence, and are made in the same way as the ordinary poultice, substituting the port wine for water.

Charcoal poultices are used for foul sores or unhealthy ulcerations, being stimulating and disinfectant. They may

be used either with crumbed bread or linseed meal. Take of linseed meal and powdered charcoal equal quantities and thoroughly mix; then proceed as in the case of the simple linsced poultice. Another method is to sprinkle the powdered charcoal (Bragg's charcoal is preferable, being very finely pulverised) over the surface of the ordinary poultice, or to dust it over the sore before the poultice is applied. It may be sprinkled by means of an ordinary pepper-box or by a powder-sprinkler. The latter is chiefly used for sprinkling over wounds the various kinds of antiseptic or stimulating powders, such as oleate of zinc, iodoform, boracic acid, etc.



SPRINKLER.

Oatmeal poultices are sometimes used in place of linsced, over which, however, they have no advantage, but are, if anything, coarser and dirtier. They are similarly prepared.

Yeast poultices are employed for cleansing and stimulating foul and indolent sores. The correct proportions are:—Beer yeast, 6 parts; flour or linseed meal, 14 parts; water at 100 degrees, 6 parts. Thoroughly mix to form a paste, and place before the fire until it rises; then apply hot.

Carrot poultices, turnip poultices, potato poultices, starch poultices, etc., have all the same effect, and, although not much used, still find supporters. They are made by simply mashing the cooked ingredient, and are either applied alone or with linseed meal or flour incorporated.

Chamomile poultices are used to relieve pain, the chamomile having a sedative effect. To prepare them, infuse chamomile flowers in the same manner as tea is infused, though for a much longer period. The poultice is then made with linseed meal and this infusion, the flowers being rejected; in some cases even the flowers may be included

Infusion of poppy heads is similarly used, and even laudanum may be added to the poultice.

Hemlock poultices for the same purposes are prepared by mixing an ounce of hemlock leaves with three ounces of linseed meal and adding these to ten ounces of boiling water in the manner previously described.

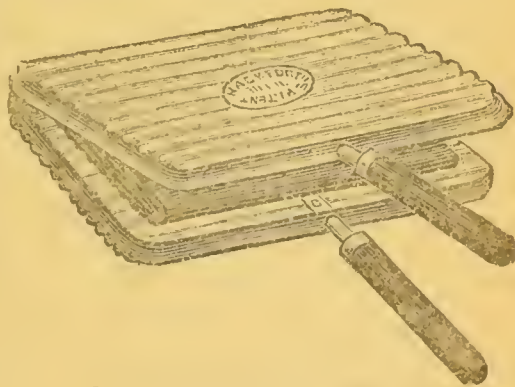
Bran or hop poultices are made by placing in a flannel bag a quantity of bran or hop flowers, moistened with boiling water. Hold this before the fire, constantly shaking up the contents, for a few minutes, and apply hot. This is merely another method of applying heat and moisture. For the application of heat, salt bags or sand bags may also be used, no water, however, being added. Hot-water bags or bottles, to be described in another chapter, are similarly employed.

Mustard poultices are most commonly used as counter-irritants. They are prepared with *cold* water. The irritant effect of mustard is due to a volatile oil, which is, of course, vaporised by heat. Mix the mustard and cold water to form a stiff paste, and spread thinly on a piece of muslin, calico, or even brown paper. Cover with a layer of thin muslin, and then apply to the part. Allow it to remain from fifteen to thirty minutes, unless otherwise ordered: longer application may cause undesirable vesication. The addition of a little vinegar increases its pungency; while, by the incorporation of white of egg, a poultice is formed which will *not* blister. Prepared *sinapisms* are much used in place of the ordinary mustard poultice, being cleaner, handier, and equally efficacious. Such plasters as those of Rigollot, or Seabury and Johnson, simply require to be dipped in cold water, and then applied to the skin. Linseed poultices have also been prepared by Johnson and Johnson, to be similarly employed—boiling water, of course, being used.

To make a *compound linseed and mustard poultice*, the

mustard may either be added in the requisite proportions to the meal previous to the addition of the water, or may be sprinkled dry over the linseed poultice just before its application. In the latter case, see that the layer of mustard is uniformly sprinkled over the surface, and that there are no lumps.

Poultices may be replaced, in many instances, by cleaner applications, quite as reliable in action. For boils, and the like, boracic lint, soaked in hot water and covered with oiled silk or gutta percha tissue, serves the purpose, and does not irritate the surrounding skin. For external inflammations, several layers of ordinary lint may be substituted for the poultice: the lint may be soaked in hot water, carbolic lotion, acetate of lead lotion, hemlock infusion, or other suitable fluid, and similarly covered. An irritant poultice may be made by soaking it in spirit of turpentine or compound camphor liniment. *Spongio piline* is also an excellent material for, poultices or fomentations, being soaked in boiling water, vinegar, turpentine, or sedative infusion, and the woolly side applied to the skin. Powdered charcoal or mustard may be sprinkled over its surface if required.



* HACKFORTH'S FLANNEL AND
POULTICE HEATER.

I may here draw attention to an excellent article shown in illustration. This is a poultice or fomentation heater, and consists of a double pan of corrugated tin plate, with wooden handles. The flannel, or poultice, is placed in the

* Fordham & Sons, York Road King's Cross, London.

pan, which is then closed, and held over a gas or lamp flame. A few minutes suffices, as the tin heats very rapidly. For heating bran poultices, salt or sand bags, fomentation-cloths, etc., it is invaluable.

FOMENTATIONS.

A fomentation is a convenient method of applying heat and moisture, is cleaner than a poultice, and has practically the same effect. It has the disadvantage, however, of more rapidly losing its heat. As with the poultice, much depends upon its method of preparation and application. *Metcalfe relates a case in point. "I was asked," he says, "to see a friend who had been ordered fomentations, which processes were being employed, though in a very imperfect manner. In the first place, the flannel was quite inadequate; it was single, instead of being three or four thicknesses; the water from which the flannel was being wrung out was not more than 110 degrees, whereas it ought to have been boiling. Then, instead of having a second fomenting pad in readiness when a renewal was necessary, there was but the one, consequently the parts were left unprotected during the time the same flannel was being wrung out again; while, in addition, the flannel when applied had not been half wrung out. The result of all this was that no amelioration of the symptoms was effected; but, on the contrary, the pain increased, although two hours had been occupied in the process. It is possible," he adds, "that, although the medical advice given was correct, this friend might have succumbed to the defective administration of the fomentations."

To prepare a fomentation, take a piece of flannel folded into several layers large enough to wholly cover the affected part. Place this in a basin of boiling water, or pour boiling

* "Water Cure for the Household."

water over it, until thoroughly saturated. Then lift with a pair of tongs and drop on a towel or other wrapper. This wrapper, with the wet flannel enclosed, should then be wrung thoroughly by twisting the ends in opposite directions, and when the excess of water has been removed, the fomentation is ready for application. If thoroughly dry, they may be applied very hot, without fear of scalding the part: scalding, however, results if they be insufficiently wrung. If a steamer be handy, this may be used for preparing the fomentation, and saves wringing out the flannel. Place the flannel in the steamer over a pan of boiling water until it be thoroughly saturated with the steam. It is then ready for applying. A potato-crusher may be utilised thus:—Place the folded flannel in the crusher, pour boiling water over it, and then press out the water as you would squeeze potatoes. The fomentation will turn out dry and hot, and ready for use. Fomentation wringers are made by attaching a stick to each end of a stout piece of towelling. The latter is used as a wrapper, while the sticks are used for the twisting process. Those devices are resorted to in order to save the burning of the fingers, which is almost unavoidable when fomentations are wrung out by hand. After applying the fomentation, it must be covered with a piece of oil-silk or jaconet cloth, or, if these are not available, with a piece of dry flannel, a towel, or even a thick layer of cotton wool. The applications should be renewed every quarter of an hour, or more frequently, if necessary; and the old one should never be removed until the new one is ready to take its place. A large flat sponge, or a piece of *spongio piline*, may be used in place of the flannel.

Fomentations may be medicated for special purposes with *anodyne* or *irritant* preparations, as the case may require it. Laudanum, tincture of belladonna, decoction of chamomile,

poppy, hemlock or marsh-mallow, bicarbonate of soda, mustard and turpentine, are all used in medicating fomentations.

Poppy fomentation is made by boiling half a pound of poppy-heads for ten minutes in four pints of water. The liquid is then strained off and kept warm; the flannels being repeatedly dipped in this decoction.

Chamomile fomentation is made by boiling two ounces of chamomile flowers with four pints of water, and straining the liquid, into which the flannel is then dipped.

Marsh-mallow fomentation is prepared with the decoction obtained by boiling a quarter of a pound of dry marsh-mallow root with five pints of water.

Mustard fomentations are made by adding half a teacupful of mustard to the quart of boiling water.

Soda fomentations—useful in allaying the pain of acute rheumatism—are prepared by soaking the flannel in a hot solution of bicarbonate of soda (ordinary baking soda).

Turpentine fomentation goes by the name of **STUPE**. To prepare a turpentine stupe, spirit of turpentine is sprinkled over the surface of a fomentation. Never soak the fomentation in turpentine, nor pour the fluid over it; always sprinkle by means of a fluid-sprinkler, or improvise one by putting a hole or slit in the cork of the bottle. In special cases, a piece of muslin may be soaked in turpentine and applied cold to the skin; the hot dry fomentation being placed over this.

Laudanum, or belladonna fomentations are prepared in the same manner as turpentine, the fluid being sprinkled over the surface of the flannel which is applied to the part.

BLISTERS.

Epispastics, or vesicants, are local applications used as counter-irritants, and on being applied to the skin induce an effusion of fluid under its outer layer or *cuticle*. This effusion of serum is commonly known as a blister, hence the

same term has been applied to the vesicant, the substance which produces it. As a general rule the physician, in ordering a part to be blistered, will prescribe the form of vesicant to be used, and will specify the exact spot to which it should be applied. It may be well, however, for you to know that there are several kinds of vesicants, such as mustard, glacial acetic acid, ammonia and cantharides. That most commonly used is a preparation of cantharides, an insect of the beetle order, and known in common parlance as the *Spanish fly*, hence the popularly-named "fly blister." The orthodox fly blister was a putty-like substance spread upon adhesive plaster. An improvement upon this is the liquid plaster, or blistering fluid, which is painted over the part with a small camel-hair pencil, and then simply protected with cotton wool. Several firms, however, have now brought out an improved cantharides vesicant, of which *Canthos* plaster may be taken as the type. This acts in much less time, keeps well, is more easily applied, does not adhere to the skin, and is more reliable and much less painful in its effects. A piece is cut the requisite size, and laid upon the part; it is sufficiently adhesive to remain *in situ*, and yet not so adhesive as to tear away the skin with it when carefully removed. This should remain for six hours, the blistering fluid from eight to ten hours, and the old-fashioned diachylon-plaster blister ten to twelve hours. Then, in the case of the plasters, it should be gently removed, taking care that the vesicle be not ruptured during this procedure. No removal is required with blistering liquid. A hot bread-poultice in each case should then be applied for two hours, at the end of which time the vesicle of fluid will have attained its maximum size. It should now be clipped with sharp scissors at its most dependent part, and the contained fluid allowed to drain off, a little pressure being applied, if need be, with a clean piece

of lint. The cuticle should not be removed, and the sore should be dressed with some simple ointment, such as vaseline or lanoline spread on a piece of boracic lint. This may be kept in position by a bandage, or by strips of adhesive plaster. The physician may order special dressing to be applied.' Always renew the dressings morning and evening, or oftener if required; and see that the lint is well spread with the ointment, as any little part omitted will adhere to the tissue and cause trouble and annoyance. Always wash the skin of the part and dry thoroughly before applying a blister; and it may be well to add that the skin of the chest, being thinner and more sensitive, a vesicant in that region acts in less time—for *Canthos* plaster allow about four hours.

LEECHES.

Leeches are employed to abstract blood from a part. The species used in medicine—the *Hirudo Medicinalis*—is on an average about three inches long, dark brown in colour, with yellow spots. Each leech will abstract from one half to one ounce of blood; and, if necessary, a still further depletion can be secured by continuing the flow from the leech-bite by means of fomentations. Before applying a leech, wash the part carefully and dry thoroughly. Then wipe the leech with a fine cloth, and hold it to the part. It may fasten at once, but occasionally there is some little difficulty encountered before the leech begins to work. If it refuses to bite, apply a drop of milk or sugar solution to the part. This may act as an incentive; or even a drop of blood, obtained either by pricking the finger or pricking the part to which it is to be applied, may serve as a bait. Several methods of applying leeches may be referred to. The simplest method is by holding it between the finger and thumb, and guiding the head to the required spot. Or it

may be placed in a wine-glass, which is then inverted over the part, and the leech left to fasten spontaneously. The chip box in which they are usually supplied by the chemist may be substituted for the wine-glass, although the latter has an advantage in being transparent. Mr. Thomas, in the "London Dispensatory," states that a leech may be made to bite on any assigned spot by placing it in a quill which is open at both ends, and closing the end by which it entered. Special leech tubes on this same principle may be obtained. These taper almost to a point so as to allow the leech to get in at one end, but prevent it getting any more than the head and neck out at the other. This suffices to allow it to bite and draw the blood. Yet another method has been suggested as infallible, viz., placing the leech in a glass of water, and, covering this with a piece of paper, invert it over the part. The paper is then carefully withdrawn, so that the leech, still in its natural element, may get at the skin. As to the length of time a leech should remain on, always leave this to the leech. It should on no account be forcibly pulled off—it will drop off when satiated. If not, a pinch of salt placed upon it will immediately secure this. If further depletion is advisable on the removal of the leech, the flow of blood from the bite may be stimulated by hot fomentations; while if, as is sometimes the case, the flow is already too copious, it may be checked either by simple digital pressure, or by means of a little pad of cotton wool soaked in perchloride of iron solution. In cases where the subsequent bleeding is apparently beyond control, medical aid should be summoned. With such a contingency as excessive hæmorrhage in view, it is not advisable to apply leeches in the vicinity of any large blood vessel, or over a vein.

Leeches once used should be destroyed: do not use them thereafter for other individuals. Salt placed on the back of the leech usually suffices to ensure its death. A patient

should never be left alone after leeching until the attendant is satisfied that all bleeding has ceased.

CUPPING.—Another method of abstracting blood is by means of the process known as “wet cupping.” This is always performed by the medical attendant ; but the process of “dry cupping,” employed for counter-irritation, may here be described. For this, special cupping glasses are used, the skin being first sponged and dried. The flame of a spirit-lamp is allowed to burn for an instant in the dome of the glass in order to expand the contained air. The cup is then rapidly slipped on to the part to be operated upon, and as the air contracts as it cools, the skin is drawn into the cup, so causing an increased flow of blood to the part. Cups with an exhausting ball are also used ; the ball being pressed and held so before application, and thereafter gradually allowed to expand, thus drawing the tissues into the cup.



Or the air in the cup may be exhausted by means of burning spirit, thus :—Rub a few drops of rectified spirit round the inside of the cup. Ignite this, and apply the cup at once, taking care not to burn the skin. The flame soon exhausts the air and is extinguished, and the skin is drawn into the cup during the exhausting process. In wet cupping the skin is scarified by means of a sharp instrument, and blood is, therefore, drawn into

cupping glass.

SUPPOSITORIES are little bullet-shaped appliances made of cacao, butter, gelatine, wax, or some such substance, which, while solid at ordinary temperatures, readily melts with the heat of the body. With these suppositories medicaments may be incorporated, and they are then inserted into the rectum for various purposes. Some are used as astringents, others, with a sedative incorporated, are used to

allay pain. Nutrient suppositories have been made of special beef preparations ; purgative suppositories of glycerine and so forth. To insert a suppository, first hold it for a moment in the hand to moisten its exterior, so that it may more easily pass into the bowel, or smear it with olive oil. Then the attendant must insert it, passing the pointed end first, and pushing it with the forefinger, previously oiled, well past the muscle at the external orifice, or it will be immediately expelled. In order to more easily pass the suppository, the patient should lie upon the side, with the thighs flexed, and the knees drawn towards the abdomen.

OINTMENTS are mixtures of medicinal ingredients, with a basis of lanoline, vaseline, lard, oil, or similar substance, and are applied for various purposes to raw or inflamed surfaces, eruptions, etc. They are usually applied on strips of lint, on which the ointment should be evenly spread with a spatula or paper knife. Apply only over the affected surface. For parasitic affections of the skin such as ringworm and itch, the prescribed ointment must be well rubbed into the part. *Inunction* is a process of rubbing an ointment or similar preparation into the skin in order that its active ingredient may be absorbed into the system, and produce either a local or constitutional action. For successful inunction, slow and gentle but persistent friction is required, and the previous application of a hot fomentation stimulates the absorptive powers of the part.



SPATULA.

LINIMENTS are external applications for rubbing into the skin, usually for local effects. Always shake the liniment bottle previous to using its contents, and wash the hands, thereafter warming them, before applying to the patient's skin. After rubbing, again wash the hands before handling anything, such as food or medicine utensils. Some

liniments so-called, such as iodine, belladonna, and croton, are not used as above, but are painted over the surface with a small brush. The term liniment in such cases is apt to be misleading.

LOTIONS are fluid remedies for external use, employed

for washing or applying to a part.

Eye Lotions are sometimes ordered to be dropped into the eye.

In such cases use a dropper as shown in the cuts. The lotion is drawn into the dropper by exhausting the air in the bulb; the patient's head is then thrown well back, the lower eyelid drawn down, and the requisite number of drops allowed to fall into the eye



by gently pressing the bulb of the dropper.

COMPRESSES are made by folding a piece of flannel or lint, or soft cloth in several layers, and applying this soaked in hot or cold water as the case may be. Cold compresses are more commonly employed, and are, practically, fomentations. Cold may be also applied in the form of the *ice bag* or *ice poultice*, which is prepared by breaking ice into small fragments (as advised on page 30), placing these in a flannel bag, sponge bag, or other receptacle, and applying in the same manner as the bran or hop poultice.

Sprays, Inhalations, and Injections, will be referred to in a subsequent chapter under "administration of medicines."

VII.—BATHS AND ALLIED TREATMENT.

“Man’s rich restorative ! his balmy bath,
That supple, lubricates, and keeps in play
The various movements of this nice machine,
Which asks such frequent periods of repair,
When tired with vain rotations of the day.”—*Young*.

“Till taught by pains,
Men really know not what good water’s worth.”—*Byron*.

If the physician in attendance should order a bath, the nurse must know how to carry out his instructions. Those instructions will simply be to give a hot or tepid bath, as the case may be, no special directions being considered necessary. The temperature may be stated, and the time of immersion ; but, in order to ensure the success of the treatment, the attendant must have a knowledge of many other little details. A few hints on the subject may, therefore, be advantageous. It is needless for me here to remark upon the necessity of bathing for the maintenance of health ; the fact is sufficiently well known. But I may give an extract from a paper* on the subject, which puts the matter in a nutshell :—

“There is only one plan for allowing the beautiful provision of Nature to do its work, and that is by daily bathing. From the surface of the skin a large amount of fluid and solid matter is continually being exhaled. The fluid escapes off into the air ; the solid remains on the surface, and, unless removed, the pores of the skin are closed up and it cannot perform its proper functions. Look alone at your hand. Have you ever thought that on the palm of your hand only there are three thousand five hundred and twenty-eight perspiratory pores on every square inch ? Every one of these is the opening of a little tube about a quarter of an inch long, so that in a square inch of the skin of your hand alone there are eight hundred and eighty-two inches of drainage. How is the skin to act, and how are these wonderfully-arranged drains to do

* By Louisa Emily Dobrée.

their work, if clogged up? One more calculation. Particular as you may be about the cleanliness of your hands, please remember that this marvellous drainage and air principle is carried out over the whole of your body. On your body—can you realise it?—there are twenty-eight miles of little drain-pipes and many thousands of openings to the surface of your skin."

There are several kinds of baths used both in health and sickness, such as simple and medicated baths, vapour baths, douche, shower, and sitz baths. Only those more commonly used can be referred to here. Simple baths are classed according to their temperature thus:—

A Cold bath	is	from	36	to	60	degrees	Fah.
A Cool bath		"	60	"	75	"	"
A Temperate bath		"	75	"	85	"	"
A Tepid bath		"	85	"	94	"	"
A Warm bath		"	94	"	98	"	"
A Hot bath		"	98	"	113	"	"

Before referring to baths proper, I may give directions as to the daily sponging of the patient's body. In very weak cases this is accomplished without requiring the patient to sit up in bed. A warmed blanket is placed under him, and the night-dress removed. Then the nurse, without removing the bed-clothes, should cautiously sponge the body, part only being sponged at a time, in order to ensure against chills. Each part when sponged should be briskly rubbed with a dry towel. Cold or tepid water may be used as the case requires, and in cases where perspiration is profuse, vinegar or dilute acetic acid may be added. This gives to the perspiring patient a feeling of warmth and refreshment.

For heated baths a bath thermometer is indispensable. Taking the temperature of the water by immersing the hand is but an imperfect method. If a bath thermometer is not forthcoming, the arm must be immersed to the elbow; the skin there is much more sensitive to the various degrees of heat.

The *cold bath* has a most invigorating effect upon the skin, increasing its circulation. The time allowed for such a bath will depend much upon the patient, but the average is five or six minutes; too long immersion results in depression. The patient should thereafter be thoroughly dried and rubbed till the skin glows and a warm sensation is experienced. Always have a pair of slippers and a warm blanket prepared for the patient as he leaves the bath.

Warm Baths and *Hot Baths* are used as sedatives and diaphoretics. In a warm bath the patient should be immersed up to the neck from five to fifteen minutes, as the physician directs. In this case also prolonged immersion is depressing. Wrap a warm blanket round the patient as he leaves the bath; this is especially necessary for young children. Warm baths are usually followed by refreshing slumber. Hot baths are very useful for reducing the temperature in the early stages of fevers, or for convulsion fits in children.

Sitz Baths.—The patient, completely undressed, sits in the bath with a sufficiency of warm water to cover the hips. A blanket or shawl should be thrown around the shoulders. The time varies from five to fifteen minutes. Afterwards the patient is well rubbed with a rough towel and put to bed. If chills are experienced, use hot water bottles or sand bags as described under *Invalid Appliances*.

Hot Foot-Baths.—The feet are placed in a hot-water bath for about ten minutes, after which they are rubbed briskly with a rough towel to stimulate the circulation. A handful of mustard increases the efficacy of the



BATH
THERMOMETER

bath. A hot foot or arm bath may easily be given in bed by means of special appliances, as shown in illustrations. An ordinary bath may even be used if special precautions are taken. For a foot-bath the patient lies upon his back with a warm blanket under the legs, similar to a draw-sheet. Flex the thighs so that the soles of the feet rest upon the bed ; then

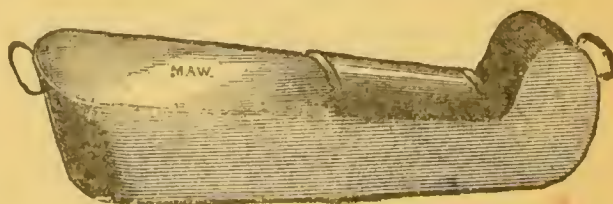


ARM BATH.

raise the feet, and place the bath upon the blanket on the spot where the knees were before the flexion of the thighs. Place

the feet in the bath and cover in the knees with the blanket. The bath is removed and the feet dried before the blanket is withdrawn from the bed. This process can be gone through without in the least soiling or wetting the bed-clothes.

MEDICATED BATHS are employed in many ailments, such as gout and rheumatism, joint and bursal affections, skin diseases, etc. The natural springs of



LEG BATH.

Bath and Buxton and of the various Continental Spas are largely used for their medicinal virtues. Such medicated baths, however, may be taken at home on a smaller scale, the most common being the alkaline bath, the sulphur bath, and the pine bath. An *Alkaline Bath* may be made by adding six ounces of crystallised carbonate of soda to twenty-five gallons of warm water ; or three ounces of carbonate of potash may be substituted. *Sulphur Baths* are prepared by adding from four to eight ounces of sulphuret of potassium to twenty-five gallons of water. *Pine Baths* are prepared by

adding a decoction of pine leaves, or a quantity of Pumiline essence, or even Sanitas fluid. *Mustard Baths* are made by adding a couple of handfuls of mustard to the ordinary bath. Prof. Charteris says a mustard bath requires sixty grains of mustard to the gallon. For a *Bran Bath*, boil four pounds of bran in one gallon of water, and strain; then add this liquid to the ordinary warm bath. For the *Nitro-Muriatic Acid Bath*, introduced by Dr. Helenus Scott, four to six ounces of this acid in three gallons of water are used.

HOT AIR BATHS

OR VAPOUR BATHS

may also be given at home. For the former, heated air alone is used; for the latter, steam is generated. They may be referred to together. Place the patient undressed on a cane-bottomed chair. Cover him with a blanket thrown around the shoulders, and then envelop both patient and chair in folds of



blanket. Place a spirit lamp or a pail of boiling water under the chair, and the hot air or steam confined by the blankets surrounding the patient's body soon induces free perspiration. If a spirit lamp be used, care must be taken not to ignite the blankets. A special apparatus to avoid this is shown in the drawing. Allow the admittance of a little air, or the lamp will go out. If a pail of boiling water be used, the steam may be increased by plunging a hot iron into the water. Ten to fifteen minutes is sufficient for this bath, after

which the patient should be sponged, briskly rubbed, and put to bed. Another method of administering the hot-air or vapour bath is shown in the next illustration. The patient is seated in a chair with the body undressed. He is then enveloped in a blanket, and the steam from a bronchitis kettle, or other special apparatus, is allowed to pass inside this covering.

The accompanying illustration is sufficiently explanatory. The same bath may be given in bed, the patient being protected by means of a "cradle" such as is referred to under "Inva-



lid Appliances." Over this the blankets are thrown, and carefully tucked in all round the bed. The tube from the apparatus is then inserted as before, and the hot air soon induces perspiration.

WET PACK.—The wet pack is used to induce perspiration, reduce high temperature, and encourage the appearance of eruptions which are delayed. It is employed principally in scarlet and typhoid fevers, where there is hyperpyrexia and delirium and an ill-developed rash. The bed is prepared by placing a waterproof sheet or Mackintosh over the ordinary sheet, and spreading over this a blanket. Then take a linen sheet, soaked in cold water, and lay it on the blanket. This wet sheet should be sufficiently long to extend from the

neck of the patient to his knees, and sufficiently broad to roll round the patient and overlap the edges in front. The patient, stripped, is laid upon the wet sheet, and enveloped in it; the blanket is then also overlapped. Another blanket is then thrown over him and tucked in at each side, and he is allowed to remain in this pack for fifteen to thirty minutes, or even longer. In high fevers the colder the water the better. There is no danger, and once the first chill is over the sensation of the pack is very agreeable and soothing. Bulwer Lytton said of it, "It seems a positive cruelty to be taken out of this magic girdle in which pain is lulled and fever cooled, and watchfulness lapped in slumber." After the pack is removed the skin should be rubbed briskly and the patient covered with warm blankets. He usually feels much refreshed, and falls into a sound sleep.

THE BLANKET BATH is similarly used, a blanket wrung out of boiling water being employed in place of the cold sheet. It must be thoroughly wrung out, or scalding is inevitable. Wrap this round the patient, then pack him in three or four dry blankets, and allow him to lie thus for about half-an-hour. After this he must be rubbed down and made comfortable. In the case of packs, as, in fact, in all cases, the nightdress must be well aired and warmed before being again put on the patient.

MEMORANDA.

After bathing, the body must always be thoroughly dried.

Rubbing with a flesh glove or loofah is advisable after a bath.

Warm baths are best in the forenoon, hot baths in the afternoon or evening.

Never bath a patient where there is danger of draughts.

Never wet the bedding when bathing or sponging an invalid.

VIII.—ADMINISTRATION OF MEDICINES.

"I wish to die, yet dare not death endure ;
 Detest the medicine, yet desire the cure."—*Dryden.*

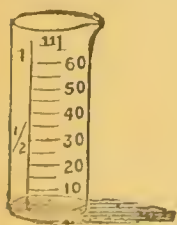
"In itself we desire health, physic only for health's sake."—*Hooker.*

THERE are several points in connection with the administration of medicines with which the nurse should be familiar. Medicines are employed in a variety of forms, and are administered in a variety of ways. A few hints may be given on each of those.

The forms of medicine in more common use are mixtures, draughts, gargles, powders, pills, inhalations, injections, suppositories, liniments, lotions, and ointments. In addition to those we have the more modern methods of administration in tabloids, tablets, wafers, palatinoids, capsules, etc., all devices to facilitate more or less the administration of the drug. The external applications have already been referred to under their appropriate heading ; with those for internal use we have now to deal.

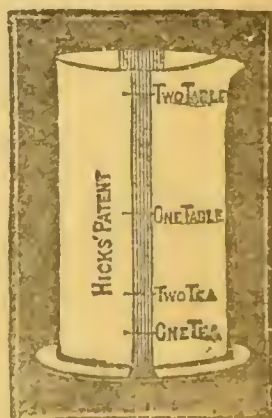
MIXTURES are medicines in liquid form, given in doses varying from drops to wineglassfuls.

For their correct and safe admini-



stration a graduated measure-glass should be used. Custom, however, has attached a fixed value of capacity to certain

household implements, which, in some instances, may be sufficiently accurate. But it is, strictly speaking, neither precise nor uniform ; all table-spoons are not alike ; the size of a drop varies with the mouth of the vessel from which it comes, and the wineglass used in one family



may hold even an ounce more than that in another. It is much safer, therefore, to use the standard graduated measure-glasses, which are inexpensive and easily obtained; the standard quantities are marked thereon. The measure used for fluids is :—

60 minims	= 1 fluid drachm.
8 fl. drachms	= 1 fl. ounce.
20 fl. ounces	= 1 pint.
8 pints	= 1 gallon.

A minim is usually, though not always correctly, regarded as equivalent to a drop.

1 teaspoonful	represents	1 fl. drachm.
1 dessertspoonful	„	2 fl. drachms.
1 tablespoonful	„	4 fl. drs. or half a fl. ounce.
1 wine glassful	„	2 fl. ounces.
1 teacupful	„	5 fl. ounces.
1 breakfast-cupful	„	8 fl. ounces.
1 tumblerful	„	10 fl. ounces, or half-a-pint.

In measuring any liquid the measure-glass must be held perfectly level. *Draughts* are liquid medicines given in one dose; the quantity is variable. *Gargles* are fluids used for the mouth and throat. The prescribed quantity is taken into the mouth, the head is thrown back, and the fluid rinsed round the throat by expiratory breathing through it. Care must be taken not to inspire, or the fluid may either be swallowed or passed into the larynx, where it gives rise to violent coughing. Have a basin always at hand into which the patient may put out the fluid after gargling.

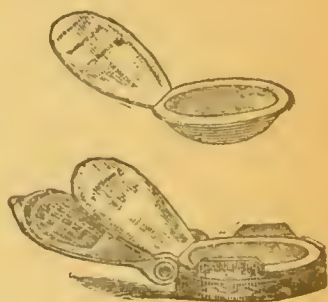
POWDERS are medicines in finely divided solid form. When its bulk is small, the powder may be placed upon the tongue and swallowed with a mouthful of milk or water; larger powders must be administered mixed in milk or other suitable fluid. See that they are thoroughly mixed, and that none of the powder is retained in the measure-glass. Powders, as a rule, are difficult to swallow, and may be

taken in cachets—an ingenious yet simple method of taking disagreeable medicines. This consists of a spoon-shaped receptacle with a flat lid, made entirely of pure rice starch. To charge the cachet, it is spread out in the folders as shown in the illustration, and the contents placed in the cup. The lid of the cachet is then wetted and brought over by means of the lid of the folder. When pressed on the top of the cup it is completely sealed, and prevents any egress of the contents into the mouth. Just prior to taking the cachet, dip it in water, then place it on the tongue, and it may be easily swallowed with a little water. The measure used for solids I may here mention is

$$\begin{aligned} 20 \text{ grains} &= 1 \text{ scruple.} \\ 3 \text{ scruples} &= 1 \text{ dram.} \end{aligned}$$

PILLS are little round masses for swallowing whole. A pill is best taken by placing it on the back of the tongue; then, by drinking a quantity of fluid, it passes along with this into the stomach. Or it may be placed on a piece of bread, or in a cachet, and taken with a mouthful of water. A *bolus* is a solid mass much larger than the ordinary pill, and is similarly administered. An appliance has been devised in order to overcome, to a certain extent, the difficulty experienced in the swallowing of pills. The “apparatus” consists simply of a piece of flexible nickel wire, which can be readily fitted to the inside rim of any glass or tumbler. The pill is rested on a little basket-shaped cage, and the patient drinks from the vessel, the pill inevitably going down with the first draught.

INHALATIONS are frequently prescribed. They are chiefly used in affections of the throat and respiratory organs, either



for stimulant, sedative, or germicidal action. They may be of hot air, of steam, or of medicated steam; of some vapour for which heat is not required; or of some medicament which will not vaporise, and can only be given, therefore, in fine spray. Much depends on the nature of the drug to be inhaled which of the many forms of apparatus should be employed. For steam inhalations the simplest is that improvised by means of a wide-mouthed jug half filled with boiling water, to which medicaments may be added if required. A swirl of stiff paper, shaped like a cone or funnel, is then made, with an opening at the top. This



MAW'S DOUBLE
VALVED INHALER.



SAVAR'S INHALER.



MAW'S INHALER.

placed over the jug, directs the vapour towards the opening, where the patient may inhale it. Or the jug may be enveloped in a towel or napkin, with only a small aperture left at the top, to which the mouth of the patient is applied. A teapot forms a good inhaler, the patient breathing in the steam from the top. Maw's inhalers (illustrated) are simple appliances, on the same principle. The jug is half filled with boiling water, the requisite amount of medicament added, and the stopper applied. The patient then inhales the steam or the medicated vapour as it issues from the jar by applying his mouth to the mouthpiece at the top. The

side opening is for admission of air, and in filling the jar the inner end of this side passage must be free of the water. In Savar's inhaler (also illustrated) the main principle is the



BRONCHITIS KETTLE.

same. Where a moistened atmosphere is to be inhaled, the bronchitis kettle, or improvised kettle, is employed. This consists of a kettle with a long tube, which directs the steam towards the patient's bed. This spout may be improvised by means of a tube of stiff brown paper, and may be fitted to an ordinary kettle. There are many forms of such appli-



ances, all on the same principle. For hot-air inhalations, simple or medicated, Sir Morell Mackenzie designed the handy and portable inhaler figured in the drawing. This consists of a spirit lamp, over which is a boiler; from this a mouthpiece is led, and any medicament used is placed on a sponge at the boiler end of the mouthpiece.

Explanation.—*a.* Box with sponge for inhalants; *b.* Inlet for air; *c.* Safety valve; *d.* Thermometer; *e.* Spirit lamp; *f.* Boiler.

In using an inhaler several points must be borne in mind. First see that the water be sufficiently hot to volatilise the drug employed: some are vaporised at a much lower temperature than others. For steam inhalations the water must be nearly boiling.

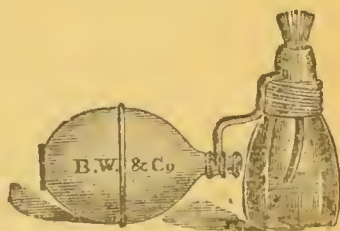
The mouthpiece is placed in the mouth, and the patient should then inhale the vapour by natural breathing without any attempt at forced inspirations. After several respirations remove the mouthpiece, take a few breaths of air, and then resume inhaling. This process is continued for the prescribed time.

SPRAYS are used when the drug employed is not sufficiently volatile to be used in vapour form, or when local applications to throat or pharynx are wanted. For spraying



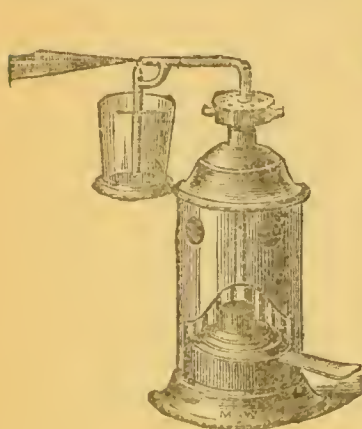
THE POST-NASAL AND LARYNGEAL "PAROLEINE" ATOMISER.

purposes many forms of apparatus have been used; what is required is that the medicine be thrown into the throat in a very fine state of division. The common hand sprays which are used for perfumes, etc., have been employed with innumerable so-called improvements. With *Atomisers* the same result is obtained. This term is used to designate an appliance which will *atomise* or spray the fluid in finely-divided particles. The illustrations show those of Burroughs & Wellcome, specially adapted for oily solutions, such as "Paroleine," a preparation in which menthol, camphor, etc., are readily soluble. One atomiser shown is used for the mouth, throat, or nose; the other is fitted with a revolving tube, from which a spray can be thrown in any direction, either upwards towards the back of the nose, or down into the windpipe.

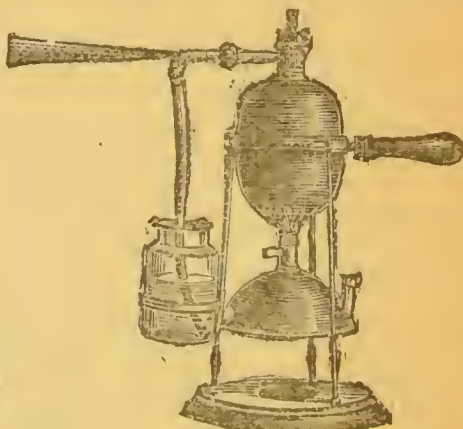


THE NASO-PHARYNGEAL "PAROLEINE" ATOMISER.

For hot or steam sprays, Siegel's, Maw's, and Adam's apparatus, are most common ; the two former are illustrated. All are based on the same principle. A spirit-lamp is used



SIEGEL'S.



MAW'S.

to boil the water in the receiver, which is placed above it. The steam generated leaves the receiver by a horizontal tube, the fine point of which meets the fine point of a per-



SIEGEL'S.

pendicular tube, communicating with the medicated solution. The force of steam across the perpendicular tube draws up the medicated fluid, and sends it in spray form along

with the steam ; this is directed into the patient's throat, as shown in the drawing. In using such an apparatus, place a receptacle under the end of the directing funnel, as the steam condenses on its sides, and drops from the larger end.

RESPIRATORS are used for those substances which, being sufficiently volatile at ordinary temperatures, require no heating apparatus. Many forms of respirators are also used, all that is required being a perforated cover for the mouth and nose, with a sponge or other receptacle for the medicine. This, volatilising, passes into the lungs with the inhaled air. Such substances as pine or eucalyptus oils, terebene, menthol, and camphor, may thus be used. The respirators designed



YEO'S RESPIRATOR.

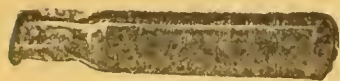


COGHILL'S RESPIRATOR.

by Dr. Coghill and Dr. Burney Yeo are most common. A serviceable respirator can easily be made, however, by the patient thus :—

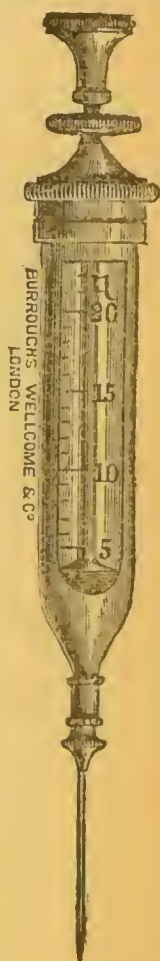
“A piece of perforated zinc (sold at 5d. the square foot), about 3in. long and 2½in. broad, is bent to a convenient form for covering the mouth and nostrils, its corners being first turned inwards. Another smaller piece of the perforated metal, 2in. long and 1½in. broad, is introduced under the turned-down corners of the larger piece. There is now an available space between the inner and outer plate of metal, which can be stuffed with tow, cotton wool, or any absorbent material. The whole can be covered with a thin layer of cotton wool, and outside this a small piece of red flannel, and elastic or other fasteners attached. In the flannel covering a little flap is made which can be lifted so that the fluid to be inhaled can be poured upon the tow through the perforated metal covering.”

The dry inhaler is a useful medium for such medicines as are employed in respirators. Its cheapness, convenient size, and the ease and frequency with which it may be used, without attracting attention, highly recommend it, particularly to sensitive patients, and those to whom a respirator is distasteful. The mouthpiece of this appliance is simply placed between the lips, and the vapour of the drug with which its interior padding is saturated, is drawn into the lungs with the inspired air.



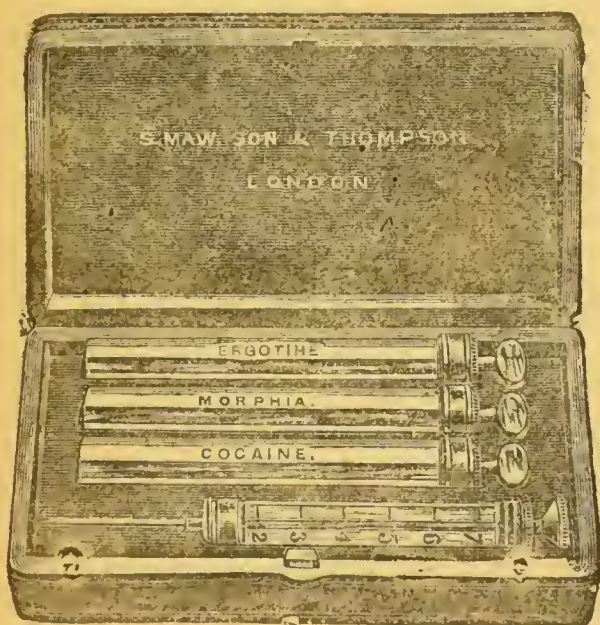
INJECTIONS are fluids introduced into any part of the body by means of syringes or similar appliances. They may be introduced under the skin—hypodermic injections—into any of the external orifices of the body, such as the nose or ear, or into the bowel in the form of enema or clyster.

Hypodermic injections are principally used when immediate action is required, the drug being administered in concentrated doses and thrown into the subcutaneous tissues, where it is at once absorbed. For this purpose, a special graduated glass syringe is used, fitted with a hollow needle. This is carefully inserted into the tissues, the prick being as rapid as possible, and the fluid slowly injected by pushing the piston. Great care should be taken not to insert the needle into any



artery or vein, nor over any bony prominence, against which the point of the needle may be broken, and be left in the

tissues. This would assuredly cause considerable pain, and would result in the formation of an abscess. The syringe, too, must be perfectly clean, and the needle must carry no rust or dirt externally or internally; abscesses at the point of puncture may result if due caution be not observed. A wire is always kept in the hollow of the needle when not in use. Drugs have a more powerful and more immediate action when administered in this manner, consequently the requisite dose is considerably smaller. For safety and freedom from



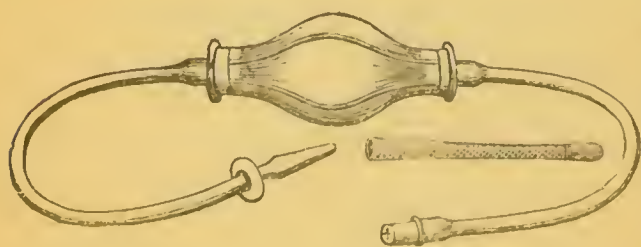
pain, the part selected should be the outside of the arms or thighs, or the muscles of the back. In certain cases other parts may be chosen. It is also desirable that the injected fluid should be at a temperature of 98 degrees Fah., and should be slowly inserted, as too rapid depression of the piston results in considerable pain, and may possibly end in abscess formation. When finished with the instrument, clean thoroughly and replace the wire through the needle. Only

in exceptional circumstances or in emergencies will the attendant be called upon to use the hypodermic syringe. It is well, however, that she should know a little about it. The illustration shows a hypodermic syringe in case, with three tubes of hypodermic remedies.

ENEMAS OR CLYSTERS are injections into the rectum or lower bowel through the anus, and are used for various purposes. The three principal kinds of enema are :—

1. *Purgative enemias*, given in large doses in order to procure rapid evacuation of the lower bowel.
2. *Astringent enemias*, employed to check discharges, to destroy worms, etc.
3. *Nutrient enemias*, administered in small doses in order to be retained and absorbed, and so nourish the patient in cases of great prostration and inability to swallow, or where there is throat or stomach obstruction or disease.

The quantity of fluid given in enemias will depend upon the action desired. Large quantities are usually immediately expelled, hence purgative enemias are given in large doses. Nutrient enemias are used in small quantities, in order to prevent expulsion. The most common apparatus used for



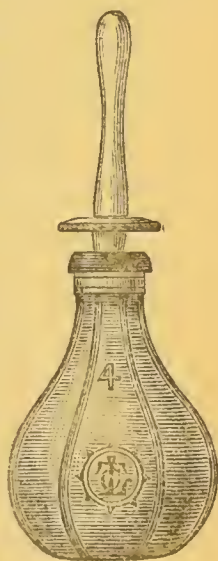
such injections is the enema syringe, similar to that shown in the figure. This consists of an india-

rubber tube, with a ball in the centre of its length, and fitted at the end with an ivory pipe or nozzle. By pressing the ball the fluid contained in the syringe is driven out through the nozzle and is prevented from travelling in the opposite

direction by means of a valve which permits the inlet, but prevents the outlet, of the fluid. The fluid is drawn into the syringe by suction when the pressure is withdrawn from the ball. Always see that the syringe is in working order before it is used. Clean it thoroughly, and test it by means of hot water. The temperature of injections should be about 98 degrees Fah. To give an enema, first raise the foot of the bed about 12 inches; place the patient on the left side, with the knees drawn up, and with a waterproof sheet under the hips. Then smear the pipe of the apparatus with warm oil or vaseline, pass it into the anus, and slowly inject the fluid. If the patient evince a premature desire to evacuate the bowel during this process, discontinue injecting for a moment and the desire to strain will pass away. Thereafter continue injecting until the prescribed quantity is used. Be careful not to inject air after all the fluid has been used, and, on withdrawing the nozzle, press a folded towel or diaper against the anus, so that the enema may be more readily retained for a few minutes. Do not unnecessarily expose your patient; and always have the bed-pan at hand ready for use.

When finished with the syringe, clean it thoroughly, and hang it up with the valve end upwards. Do not keep it in the box, as it is apt to bend, and so spoil the rubber.

When small quantities of fluid are to be injected, the ball syringe or clyster pipe is preferable. The fluid is similarly drawn into this appliance, and care must be exercised that it be *full* before injecting, thus avoiding the injection of air. A teaspoonful of glycerine is frequently used *per rectum* as a remedy for constipation; a special glycerine syringe with



a long nozzle, and capable of containing about two fluid drachms, is generally employed for this purpose.

VAGINAL INJECTIONS in uterine ailments may be given either with the enema syringe, by means of the special vaginal tube figured along with it, or by means of a hydrostatic douche. In the former case the vaginal tube is fitted



on to the ivory nozzle. The douche consists of a reservoir, as shown in the illustration, from which a long tube is led, ending in the special nozzle. So long as this nozzle is above the level of the reservoir, no water will pass through it; when the reservoir is raised to a higher level the contained fluid begins to flow through the tube. To give a vaginal douche, the patient is placed upon the back, with a bed-pan under the hips, and the bed protected by a waterproof sheet. The nozzle, smeared with a simple lubricant, is then introduced into the vagina, the reservoir full of fluid being kept at a lower level. Then when the nozzle is in position the attendant must raise the reservoir, and either hold it as high as required, or hang it on a nail driven into the wall at a convenient height. The force of the flow may be regulated by the

height of the reservoir. When all the fluid has passed through, lower this reservoir and withdraw the nozzle, having previously turned the stopcock, if it be provided with such an appliance. Hydrostatic douches fitted with special tubes and nozzles for douche or irrigation purposes may be had from the Argyle Rubber Company, Glasgow; or Maw, Son & Thompson, London.

All medicines should be administered with regularity and exactness. This rule should on no account be departed from, unless the patient happen to be asleep. If the dose be ordered to be given every hour, do not let it be a minute late. If ordered every three hours, begin at 9 a.m.; if every four hours, begin at 10 a.m. If three times a day, give at 11 a.m., 3 p.m., and 7 p.m., so that it may not interfere with the regular meals, unless ordered otherwise; if twice a day, give at 10 a.m. and 5 p.m. Sleeping draughts or powders are given at bedtime.

Always carefully read the directions on the bottle before administering the medicine; the importance of this has already been referred to at page 22. Note the exact time of administration in your report, so that you will be able to give the next dose punctually. To secure this a very handy little appliance (costing one shilling) may be purchased from most chemists, and used with advantage. This consists of a little cardboard stand on which is printed the figure of a clock; the hands of the clock are movable. Above this are the words—"NEXT DOSE TO BE TAKEN AT," and the movable hands may be placed at the required time, thus keeping patient and nurse punctual. On this same appliance, under the clock, is a little square slate on which any special directions may be written with a pencil, which is attached at the side. Those directions may be rubbed out and others substituted each time the doctor may wish.

It is a good rule always to shake the bottle, although not expressly directed to do so, before pouring out its contents. When pouring out, always do so with the label side uppermost, and so avoid its being soiled. When the medicine is poured, recork the bottle; never leave uncorked longer than necessary.

Lastly, I may note several points with respect to special medicines. Purgatives, especially saline purgatives, should

be given preferably on an empty stomach. Preparations of iron are best taken through a glass tube, as otherwise they are apt to blacken the teeth, lips, and tongue. If you are not told that the medicine contains iron, look at the cork ; if the lower end of it is blackened by contact with the mixture, then use a tube. Always rinse the mouth with warm water after a dose of such a medicine.

Cod liver oil may be taken in milk or in ginger wine ; always put some of the vehicle in the glass before pouring out the oil. Its taste is difficult to disguise. Many chemists prepare it in emulsion form, combined with hypophosphites, in which form it is more palatable, and does not prove troublesome after administration. Castor oil may also be taken in milk or ginger wine, in coffee or brandy. It may be made into a tasteless emulsion by adding a little cinnamon water or orange flower water, a few drops of liquor potassae, and a drop or two of oil of lemon. This, if properly emulsified, is palatable as milk. Allen & Hanbury's tasteless castor oil needs no disguising. Epsom salts may be disguised by peppermint water, quinine or cinchona by milk, senna by cloves, and aloes by liquorice. A pinch of salt on the tongue previous to taking it will effectually disguise the taste of salicin or salicylate of soda ; but, in the majority of cases, by closing the nostrils tight with the finger and thumb during the process of swallowing medicine, no taste whatever is appreciated, and a pinch of sugar on the tongue is an excellent finish.

IX.—INVALID DIET.

"I will attend my husband, be his nurse,
Diet his sickness, for it is my office.—*Shakespeare.*

"There's no want of meat, sir,
Portly and curious viands are prepared
To please all kinds of appetites"—*Massinger.*

THE dietary of the invalid will, in most cases, be governed in great measure by the medical attendant. But there are many points in connection with the preparation and administration of the prescribed diet which every nurse should lay to heart. First see that the patient is fed with regularity and punctuality: the regular administration of food is quite as important as the regular administration of medicine. To keep a patient wearying and waiting upon his meals is one of the worst faults of a careless nurse. Never overload the stomach, however; rather give small quantities frequently repeated. Stuffing the invalid should never be resorted to; it must always be borne in mind that not what the patient can swallow and contain, but what he can digest and assimilate, will prove of service to him. Food should not be prepared nor kept lying in the sick room, nor should too great a quantity be set before an invalid at once. This is apt to dispel the appetite. Florence Nightingale, the queen of nurses, says:—

"To leave the patient's untasted food by his side from meal to meal, in hopes that he will eat it in the interval, is simply to prevent him from taking food at all. I have known patients literally incapacitated from taking any one article of food after another by this piece of ignorance. Let the food come at the right time, and be taken away, eaten or uneaten, at the right time; but never let a patient have something always standing by him, if you don't wish to disgust him with everything."

The food should be as varied as the condition of the patient will allow. Constant feeding with one particular

article of diet, such as milk or beef tea, becomes monotonous, and a little variety not only whets the appetite but gives the patient a relish for what he consumes. And a little relished is of much more value than a large quantity of nutriment forced. Dr. Balbirnie says :—

“Attend carefully to the first feeling of satiety—the first feeling of repletion. The relish given by the appetite then ceases, and every mouthful after this accumulates materials more than the stomach can master, and which will oppress and annoy for hours, incapacitate for due digestion of the next meal, and probably disorder the system of the susceptible for days.”

Meals should be neatly and tastefully served. Neatness and tidiness in this respect has a wonderful effect in stimulating a flagging appetite ; whereas carelessness in serving but engenders a disgust at food. Even in health “things taste so much nicer out of pretty dishes” ; how much more so, then, must this be true in sickness. Quiet at meal time is also essential. It is most annoying and harassing for the invalid to see the attendant dusting and cleaning at such a time, while talking during meals results in premature satiety. Lastly, do not, unless specially directed, wake an invalid to partake of food. The importance of this has already been referred to.

I shall now refer to a few preparations and recipes which may be found useful in the sick room. Of invalid foods and dietetic specialties we have legion. Among those in common use are Allen & Hanbury's, Benger's, Carnrick's, Mellin's, Neave's, and Savory & Moore's foods. Of beef preparations we have Benger's jellies, Brand's essences, Invalid Bovril and Essence of Beef, Liquor Carnis, Valentine's Meat Juice and Bovinine. Of wines those most commonly prescribed are Coleman's Meat and Malt Wine (“Wincarnis”), Burrough's beef and iron wine, coca wine, Bovril wine, and Kola wine. Marshall's preparations of wheat, Farola, Granola, and Semella are invaluable in the sick-room, containing as they do

the nutrient material of the bran as well as the flour, and easily assimilated by the most delicate digestion. Another preparation—*Ptyaloid*—is used as a digestive for starchy foods. Numberless dainty dishes may be made from them. The following recipes may be useful :—

NUTRITIOUS DISH FOR INVALIDS.—Mix Farola with a seventh part of its weight of *Ptyaloid*, mix three or four ounces of this with enough of cold water to make it into a thick cream. Put this into a saucepan containing $\frac{3}{4}$ of a pint of boiling water. Leave the whole in a warm place for about twenty minutes, stirring occasionally ; it will soon be completely dissolved. It may be taken in this state, or if it is flavoured with lemon juice and made into a shape with gelatine, it is a very agreeable and most satisfying food.

BAKED PUDDING.—Into a pint and a half of milk, when boiling, stir three tablespoonfuls of Granola. Add two ounces of butter, and three and a half ounces of sugar, with the grated rind of a lemon. While still hot, beat into it four eggs. Bake for half-an-hour in a moderate oven.

BLANC MANGE.—Put one and a-half pints of milk to boil with 2 or 3 ounces of sugar. Mix 3 ounces of Farola with half-a-pint of cold milk ; add to the boiling milk ; stir and boil about six minutes. Put into a mould wetted with cold water. Set for a few hours in a cold place. Any desired flavouring may be introduced during the preparation.

Some excellent dishes are made with Frame Food preparations. The extract, which is prepared by exhausting wheat bran of its soluble nutrient material, is a preparation of value.

FRAME FOOD MOULD.—Ingredients :—

- | | |
|--|------------------------------|
| 2 oz. (full weight) of corn-flour, semella, or farola. | |
| 1 small teaspoonful of <i>Frame Food Extract</i> . | |
| 2½ oz. of sugar. | 1 egg (or two if preferred). |
| 1½ pint of milk. | Vanilla to flavour. |

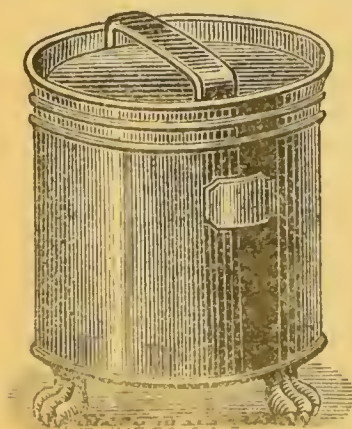
MODE.—Put the milk (all but half a tumblerful) on the fire, with the sugar and a piece of vanilla pod (slit open) about two inches long. First mix the corn-flour dry with the *Frame Food Extract*, then with the milk left over from the 1½ pint, adding the *yolk* of an egg well beaten up. When perfectly smooth, stir into the milk, which should be on the point of boiling, and allow the whole to boil for a few minutes, and well mix in the *white* of an egg, previously beaten to a stiff froth. Remove the piece of vanilla, and put into a mould to cool.

FRAME FOOD SOUFFLE.—Ingredients :—

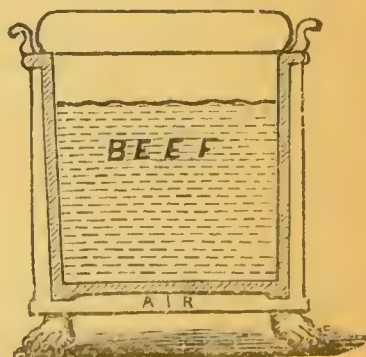
1 pint milk. 2 eggs. $\frac{1}{2}$ oz of butter.
 $1\frac{1}{2}$ oz. of arrowroot (corn-flour or Farola).
 A saltspoonful of *Frame Food Extract*
 1 oz. of castor sugar. Flavouring to taste.

MODE.—Blend very thoroughly the arrowroot and *Extract* ; mix it to a smooth paste with a little of the milk (cold), boil the remaining portion of the milk, and add it by degrees, then return the whole to the saucepan, and stir and boil for a minute. Take it from the fire, beat in the butter and sugar, and when cooled a little, the yolks of the eggs, and the flavouring (if allowed). Fresh lemon rind is as nice as anything. As a rule invalids are better without *spices* of any kind. Next put the whites of the eggs on a plate, add a grain of salt, and beat them to a stiff froth with a broad-bladed knife ; then stir them in as gently as possible, pour the whole into a buttered pie dish, and bake in a moderate oven until set, and the surface delicately browned, then serve at once. Time about twenty minutes, according to depth of dish. It is, however, preferable *under* rather than *over* cooked.

BEEF TEA is frequently ordered and almost as frequently prepared in a practically useless way. In obtaining an extract of beef, commonly called beef tea, it is important



SECTION.



DOLBY'S EXTRACTOR.

that the temperature within the vessel containing the meat should never reach boiling point, but should remain as nearly as possible at a temperature below 160° Fahrenheit,

In the ordinary ways of making beef tea, whether in a jar placed in an oven to stew, or in a saucepan placed on a fire to simmer, it is difficult to prevent the temperature getting too high, and therefore the extract obtained is deficient in quality and quantity. This is avoided by using a beef tea extractor, such as figured in the drawing.

The arrangement of this most useful apparatus is such that the heat maintained is exactly the right degree to insure the "extraction" of every particle of nourishment from meat of all kinds, and the result is a true, rich, and highly nourishing gravy.

The apparatus consists of a double vessel, made in two parts; the outer vessel has an inner flange at the top, and the inner vessel has an outer flange by which it is suspended upon the outer vessel, so as to leave a sufficient space between their respective sides and bottoms. The inner vessel is made of *porcelain*.

The space between the two vessels must always be left empty, no water must be allowed to lodge there; it must only contain air, because during the process of cooking this air will act as a slow conductor of the heat, just sufficient to allow the temperature within the inner vessel to extract the essence of meat.

Fresh lean beef cut small is placed in the china vessel, and covered with cold water. The lid is then screwed on and the apparatus placed in a pan in cold water reaching two-thirds up the side of the extractor. This pan must also have the lid on. Boil for three hours; then remove the apparatus and unscrew the lid. Stir the meat, and flavour; then remove the meat, and the fluid extract remains.

The *Nursing Record* offered a prize for the best method of preparing beef tea, and this was secured by the following directions:—

"Take 1 lb. of the leg of beef, to which, when minced, add 1 pint of cold water. Let stand for four hours; then put into an earthenware vessel, lightly covered over, and place it inside another vessel or pan

filled with water, which, after coming to boiling point, must be allowed to simmer from four to six hours gently. This can be thickened if desired, and the doctor approves, with arrowroot sago, or rice when the patient can take it, or varied by putting $\frac{1}{2}$ -lb. of mutton or veal to $\frac{1}{2}$ -lb. of beef, and flavoured with celery."

The following is the Kensington School recipe used in many hospitals:—

' To every pound of beef allow 1 pint of cold water. Scrape the beef very fine, leave only fat and fibre. Put the lean with the water into a stone jar and allow to stand for half-an hour or so. Do not put any salt to it. Then tie the jar over and plunge it into a saucepan of boiling water, and let it simmer for three or four hours. Strain and season. If the beef tea is required to be very strong, reduce the quantity of water.

In making beef tea for a patient suffering from acute disease, no flavouring, salt, or spice should be added. It is very easy to add afterwards if it is needed ; but the organs of taste are often in an abnormally sensitive condition, so that the tea already tastes too salt from the presence of saline matter in the meat, especially if it is made very strong, in the hope of affording better nourishment. This does not apply to convalescents. As to skimming off all the fat, most patients demand its removal ; but a little really aids in digestion, and often makes the food slip down less painfully when deglutition is difficult.

Beef tea prepared in the orthodox method of steeping in cold water, and then simmering, is valueless as a nutrient. It is only a stimulant, and does not contain the albuminoid portions essential to make it nourishing. This is also the disadvantage in most beef extracts. The Invalid Bovril of the Bovril Company is a notable exception, containing the nutrient elements of the beef in addition to the stimulant.

Of beef essences, that of the Bovril Company is also reliable : it has a decided advantage in being inclosed in a porcelain, in place of a metallic vessel,

To prepare a nourishing beef essence, Liebig's method is as follows :—

Half-a-pound of raw lean beef (chicken or other meat may also be used) is finely minced, placed in a glass or earthenware vessel with three-fourths of a pint of water, to which four drops of muriatic acid and half-a-teaspoonful of salt have been added. The whole is well stirred, and then allowed to stand for an hour. Thereafter it is strained through a hair sieve, and the sieve and residue washed with five ounces of water. This is taken cold, or only slightly warmed.

PEPTONISED FOODS are very frequently prescribed ; these may be easily prepared by using Fairchild's peptonising powders, Benger's *Liquor Pancreaticus*, or other similar digestives.

Dr. Burney Yeo recommends peptonised beef tea to be prepared as follows :—"Take half-a-pound of finely minced lean beef, add to it a pint of cold water, and cook over a gentle fire till it boils, decant the beef tea into a jar or bottle, rub the meat into a paste, add it to the beef tea and mix in another pint of water to reduce the temperature to about 140 degrees Fah., add sixty grains Fairchild's Zymine and twenty grains Sodium Bicarbonate, stand in a warm place for three hours, shaking occasionally, then boil quickly for two or three minutes and strain. This is weak beef tea, but it can be made of any strength required. *Season with pepper and salt to taste.*"

PEPTONISED MILK.—Add a Fairchild Zymine Peptonising Powder to one pint of milk (diluted with $\frac{1}{2}$ pint of water). Keep warm twenty minutes, boil, sweeten, and add a little cream

PEPTONISED GRUEL.—Add a Zymine Peptonising Powder to $\frac{1}{2}$ pint of milk and $\frac{1}{2}$ pint gruel (made with water). Keep warm thirty minutes, stirring occasionally.

PEPTONISED MILK JELLY.—Pour $\frac{3}{4}$ oz. gelatine into a pint of water, and when it is swollen gently warm, add a pint of peptonised milk (which has been boiled), $\frac{1}{4}$ lb. crushed sugar, juice of lemon and orange, three tablespoonfuls of rum, and strain through finest flannel. Put in cold place to set.

The following reliable recipes for invalid preparations, culled from various sources, may also prove of value :—

BEEF 'TEA AND GROATS.—Mix thoroughly one tablespoonful of Robinson's Patent Groats with two of cold water ; add to this a pint of strong beef tea, stirring all the while.

CHICKEN BROTH.—Cut up a fowl, and break the leg bones. Put it into a stew-pan with a quart (eight gills) of cold water, a teaspoonful of salt, and the same quantity of loaf sugar. Boil gently, skimming constantly for four hours. Then strain into a basin. When cold, take off the fat; when required for use, warm a cupful.

CHICKEN JELLY.—Take a whole chicken, cut it up, put it into a jar, pour over it a large teacupful of cold water, tie it down very closely with a bladder, place the jar in a saucepan of water, and boil quickly for nine hours. Strain the liquid through a sieve. When it is cold remove the fat. A most nourishing and agreeable jelly remains.

MILK JELLY.—Scald a calf's foot and scrape very clean; put on to boil with a pint of water. Let it boil gently for two hours, then add a pint of milk, and gently simmer for two hours more. Sweeten with a tablespoonful of sugar, flavour with cinnamon or lemon; strain and pour into a shape to get cold.

BREAD JELLY.—Take the crumb of a loaf, break it up, pour boiling water over it, and leave to soak for three hours. Then strain off the water and add fresh. Place the mixture on the fire, and let it boil till it is perfectly smooth. Take it out, press out the water, flavour to taste, press it into a mould and turn it out when required for use.

PORT WINE JELLY.—Dissolve $\frac{1}{2}$ oz. of isinglass in a wineglassful of water with two pieces of loaf sugar in an oven or over a gentle fire. Add five wineglassfuls of port wine or Coleman's "Wincarnis"; stir for ten minutes, and strain through muslin. Pour into a mould moistened with cold water and set aside to cool. May be flavoured by first adding cinnamon or nutmeg to the wine.

CALF'S FOOT JELLY.—Clean two calves' feet, cut into pieces, and stew in two quarts water till reduced to one quart. When cold, remove the fat and separate the jelly from the sediment. Then put the jelly into a saucepan with brandy and flavouring to taste, and the shells and whites of four eggs well mixed together; boil for fifteen minutes, cover and let stand for a short time, and strain into a mould while hot.

CHICKEN PANADA.—Rub together in a mortar or bowl the meat from the breast and wings of a roasted or boiled chicken with an equal quantity of stale bread; then gradually add the water in which the chicken was boiled, or beef tea, until the whole forms a fluid paste. Then boil for ten minutes, stirring all the time.

ARROWROOT JELLY.—Boil $\frac{1}{2}$ pint of water in a saucepan; mix half-a-tablespoonful of Arrowroot to a smooth paste in cold water, and then pour into a saucepan. Stir for five minutes; add a sufficiency of sugar, flavour to taste, and pour into a wet cup to serve when cold.

GRUEL.—Take of Robinson's Patent Groats one tablespoonful, mix with a wineglassful of cold water, gradually added, into a smooth paste, pour this into a stew-pan containing nearly a pint of boiling water, or milk, stir the gruel on the fire while it boils for ten minutes; pour it into a basin, add a pinch of salt and a little butter, or if more agreeable, some sugar, and a small quantity of spirits.

BARLEY WATER — Take of Robinson's Patent Barley one ounce mixed with a wineglassful of cold water, pour this into a stew-pan containing one quart of boiling water, stir this over the fire while boiling for five minutes; then flavour with a small bit of lemon peel or cinnamon, and sweeten according to taste.

ARROWROOT DRINK.—Mix two teaspoonfuls of arrowroot in about three tablespoonfuls of cold water, then pour in about half-a-pint of boiling water; when well mixed, add, by degrees, about half-a-pint of cold water, stirring all the time so as to make it perfectly smooth. It should be about the consistency of cream; if too thick, a little more may be added. Then pour in two wineglassfuls of sherry, or one of brandy, add sugar to taste, and give to patient in a tumbler. A lump of ice may be added if allowed.

LEMONADE, EFFERVESCING.—Squeeze out two large lemons, and add a pint of water to the juice, and three or four lumps of white sugar. When required for use pour half of it into a tumbler, and add half a small teaspoonful of bicarbonate of soda; stir and drink whilst effervescing.

LENTIL OR BARLEY CREAM.—Cut up small, two pounds of veal, boil it in a quart of water with a quarter of a pound of pearl barley or lentil flour. Boil all together till it will pass through a fine wire sieve, and become of the consistency of cream. Add salt to taste. Let it grow cool, and warm a small quantity whenever it is wanted.

TOAST WATER.—A slice of stale bread should be slowly baked through, then put in a jug with a quart of boiling water poured over it, and allowed to stand till cool. Flavour with lemon juice or lemon peel. The best and most digestible way of making toast is to cut bread into a quarter-of-an inch thick slices, trim off the crusts, and put them on a baking sheet. Place the sheet in a moderate oven till the bread is a delicate brown colour. It is *very* necessary to cut the bread thin for toast.

IMPERIAL DRINK.—Put half-an-ounce of cream of tartar, the juice of one lemon, and two tablespoonfuls of sifted sugar into a jug, and pour over them one quart (eight gills) of boiling water. Cover till cold.

TAMARIND DRINK.—Take six or eight ounces of tamarinds, pour over them one quart (eight gills) of boiling water. Sweeten to taste. Cover, and let it stand for an hour.

APPLE TEA.—Take four large cooking apples cut them in quarters with the peel on. Cut a lemon into thin slices with the rind on, sprinkle over the whole six ounces of crushed loaf sugar. Put all into a jug, and over it pour two quarts of boiling water; cover until cold, strain, and it will be fit to drink. Should the lemon be disapproved of it is easy to omit it, or to replace it by three cloves as a pleasant flavouring.

WINE WHEY.—To a breakfast cupful of boiling milk add one or two wine-glassfuls of sherry or madeira. Strain through a fine sieve, and sweeten with sifted sugar.

CAUDLE.—Beat up an egg to a froth, add a glass of sherry and half-a-pint of gruel; flavour with lemon peel, nutmeg, and sugar.

LINSEED TEA.—Two tablespoonfuls of linseed, half a lemon, $\frac{1}{4}$ oz. of bruised liquorice root, and sugar candy to taste. Add these to a pint of water, boil for $1\frac{1}{2}$ hours, and strain.

EGG FLIP.—Half-an ounce of powdered sugar, and three eggs whisked with a tumblerful of milk. To this add two or three ounces or more of brandy, the quantity varying with each case.

TEA.—Sir Andrew Clarke advises tea to be made with boiling milk; instead of water, allowing it to infuse from three to four minutes.

ALUM WHEY.—A teaspoonful of powdered alum is added to a pint of hot milk and the whey strained off.

KOUMISS—Artificial Koumiss may be prepared by taking 150 ounces of skimmed cow's milk; fifty ounces of water; brewer's yeast one ounce; cane sugar three ounces; milk sugar five ounces. Dissolve the cane sugar in twenty ounces of water, add to it half of the milk, and set aside in a warm place for six hours till fermentation begins, then add the rest of the ingredients (the milk sugar being dissolved in water); mix well, strain, and bottle.

KOUMISS (another method).—Take 1 pint of buttermilk, 4 pints of sweet milk, and five pieces of loaf sugar. Mix both kinds of milk, add the sugar, and pour the whole from one jug to another till the sugar is melted; it takes about a quarter-of-an-hour. Let it stand in a warm corner of the kitchen for 12 hours, covered with muslin; then bottle it in pint bottles, tie down the corks with string, and in four days it is ready for use. Let the bottles lie on their sides. Pint bottles are most convenient, as when a bottle is opened the koumiss should be soon used

Koumiss is really the fermented milk of mares, and is largely used as a food and intoxicating beverage in South-East Russia. Artificial Koumiss made in England from cow's milk is prepared by many dairy companies. It is now largely used as a nutrient, being easily digested and assimilated. In conclusion, I would warn you against the indiscriminate use of condensed milk, unless it be of a reliable brand. The Anglo-Swiss Company's preparations may be relied upon, as all the cream belonging to the milk is used. The milk, cocoa and milk, coffee and milk, and other preparations of this firm may with confidence be recommended. To make a cup of either beverage it is only necessary to add hot water to a teaspoonful or so of the contents of the tin.

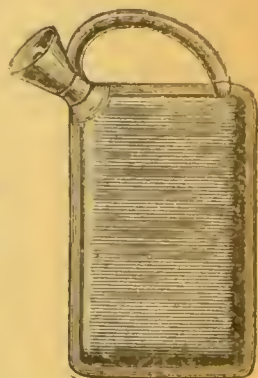
X.—INVALID APPLIANCES.

“ Diseases desp'rate grown,
By desperate appliances relieved.”—*Shakespeare.*

HOT WATER BOTTLES and HOT WATER BAGS are frequently used for the application of dry heat in place of fomentations and bran poultices. They are also serviceable in the event of the patient feeling cold. In many cases they are ordered by the doctor, but may be used at the

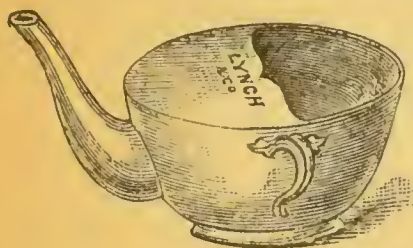
nurse's discretion should any chill be complained of in the doctor's absence.

Hot water bottles are usually made of india-rubber. When these are applied see that they are well stoppered, and always refill when cold. Any bottle or jar, however, may serve the purpose, being wrapped in a



double layer of flannel before being applied to the body. Hot bricks, hot plates, and other improvised remedies have been employed in emergency cases; sand bags are also useful for the same purpose. To make a sand bag, procure some fine thoroughly dried sand and pack it into a bag of flannel about a foot square. Having sewn this up, place it in a linen cover. To heat the bag it may be placed in the oven, on the stove, in a steamer, or even in a pot over the fire, and the sand will retain the heat, thus obtained, for a considerable time. One or two such bags should be kept ready for use. They are very handy, easily applied, and if not too firmly packed can be moulded to any shape, and so suit any part of the body.

FEEDING CUPS are used in cases where the patient is too weak to sit up in bed, or where it is essential that the head should not be raised. They are made in a variety of shapes, but all are provided with a spout, through which the food is administered, and are half covered over the top, so as to allow of the cup being tilted, without the spilling of its



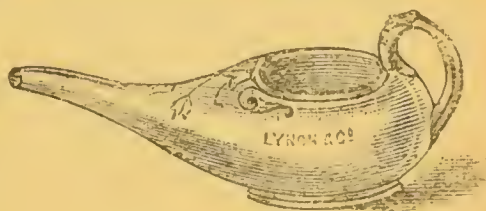
FEEDING CUP.

contents. In administering food by means of such a cup, the nurse must first place a serviette under the patient's chin, to catch any drops which may run from the mouth. The food must not be too hot, must be

carefully given, and the patient must be allowed plenty of time. Always scald feeding cups and heat them before being used for hot foods. It is a safe rule to have two feeding cups and thus ensure cleanliness.

SPUTUM CUPS are special receptacles for the invalid's spit, and are handy in cases where this must be kept for the doctor's inspection.

They are also made in a variety of forms, and should be fitted with a cover. Previous to being used, a little water or simple

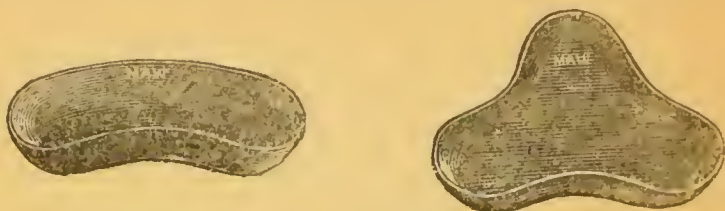


FEEDING CUP.

disinfectant fluid should be placed in the cup; this will greatly facilitate the cleansing of it. Always use some special receptacle for the spit; never allow the patient to spit into the *pôt-de-chambre*.

BASINS made in several shapes, which may be adapted to the different parts of the body, are employed in many cases, such as discharging wounds, which require syringing, etc.

The illustrations represent the more common forms of vulcanite pus basins which are most useful in surgical cases.



BED PANS are made in a variety of forms, several of which are illustrated. The slipper shape is most appropriate for general use, the round pan being neither so serviceable nor so comfortable for the invalid, unless he be able to sit up in bed. In using the bed-pan, the patient should lie upon the back, with the thighs flexed, so that the feet rest upon the bed. The hips are then gently raised and



the pan slipped underneath from the bottom of the bed upwards,



the handle being towards the feet. The pan should always be warmed before being used, and should also have a small quantity of warm water in it to facilitate cleansing. If fitted



with a cover, such as shown in one of the accompanying cuts, this should be

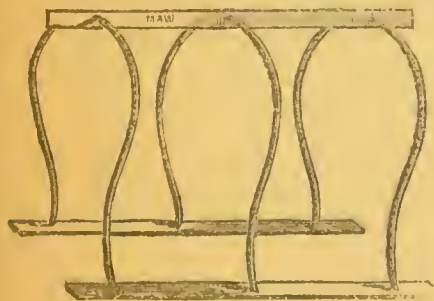


placed on immediately the pan is removed from the bed. All chamber utensils should be provided with covers. Carry out of the room at once—slops should never be permitted to lie in the sick room. The indiarubber bed-pan is in many cases to be preferred. These are made to hold either air or water,

and may be had from the Argyle Rubber Co. and other makers. They do not cause the discomfort which metal or earthenware pans often do. Bed-pans enveloped in flannel covering are not advisable; they may be comfortable but require constant washing and disinfecting. The plain earthenware pan, well warmed, is safer. Some are fitted with a hollow handle communicating with the interior of the pan, and are emptied by this means. Care must be taken, therefore, when removing such a pan from the bed. Always rinse out the pan after use with some disinfectant, such as Sanitas fluid or carbolic solution; do not use chloride of lime for indiarubber pans.



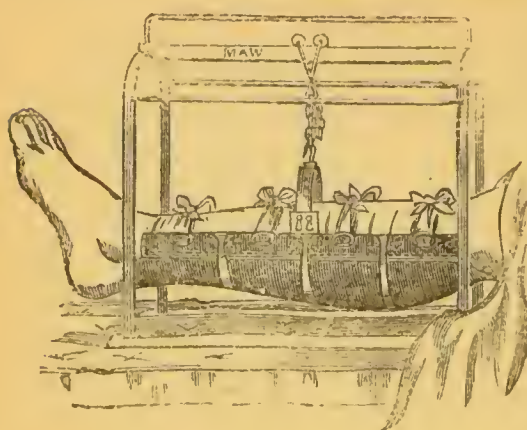
CAGES are employed as a means of protection for any part of the body, to bear the weight of bedclothes, etc., and so increase the comfort of the invalid. Of such cages many forms and sizes are manufactured, the most common being the simple frame figured in the first illustration. Another



cut illustrates a special cage in use, with a cradle and swing apparatus (Salter's) for the support and protection of the injured limb. Cages, however, may be improvised when required, the method of preparing substitutions

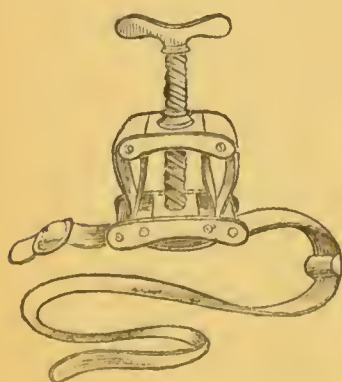
depending, of necessity, upon the nature and situation of the lesion. In cases of fracture of the lower limb, for example, an improvised serviceable cage might be formed of an ordinary band-box. This, with the bottom removed, is slipped

on the patient's leg, and will be found to answer the purpose, protecting the injured part from the oftentimes distressing



weight of the bedclothes. A stool placed on the bed over the part might also serve as a protection, or the same end may be attained by fastening up the bedclothes to a string or strings stretched from top to bottom of the bed.

TOURNIQUETS are employed to apply pressure on a blood-vessel, and so check the flow of blood to a bleeding part. Many varieties of such apparatus are made, several of which are illustrated. All that is required is a pad for pressure



over the artery, and a strap to fasten and make pressure on that pad. To improvise a tourniquet is a very simple matter. A pad may be formed of a cork, or even a folded piece of cloth or paper. A handkerchief will serve as a strap, and additional pressure may readily be secured by

inserting a piece of stick or similar appliance under the handkerchief, and then twisting it till the required pressure is obtained.

DRAINAGE TUBES are used to permit of the free escape of matter from wounds or abscesses. They are made of various substances, *e.g.*, decalcified bone, rubber tubing, or glass. The bone is not much used. Those of natural rubber are to be preferred, and are, at intervals throughout their length, perforated with openings, through which the fluid may pass into the tube and drain off. Drainage tubes are generally removed and cleaned daily, but under certain circumstances more frequent cleansing is necessitated. See that the tube is thoroughly purified and rendered aseptic before its re-introduction into the wound.

SICK CHILDREN.

“Be ever gentle with the children.”—ELIHU BURRIT

THE proper nursing of sick children is a subject of so much importance that I am loth, in such a work, and with the remaining space at my disposal, to refer to it at all. As the gardener must devote additional care to the young and tender plant, so children demand more careful attention and nursing than do patients of maturer years. The reasons for this are many. They are unable to explain their troubles, locate their sufferings, or correctly express their wants, and the nurse must, consequently, glean all information by careful observation of signs and symptoms; by watching the position and attitude of the sufferer, noting variations of expression, the nature of sleep, the condition of the excretions, and perhaps most important of all, the cry. No child in health and at ease will cry; that cry will, therefore, indicate something, and by the nature of it that something is diagnosed. The cry is characteristic. Dr. Eustace Smith, for example, says, “A hungry infant in most cases clenches his hands and flexes his limbs as he utters his complaints, and continues until satisfied. If tortured by colicky pain, the cry is violent, paroxysmal, and accompanied by uneasy movements of the body. A shrill scream, uttered at intervals, the child lying in a drowsy state with closed eyes, is suggestive of tubercular meningitis (water in the head). A constant unappeasable screaming is often the consequence of earache, and the child frequently presses the side of the head against the mother’s breast.” Children are also more difficult to interest and amuse. “They are much more susceptible than grown people,” says Miss Nightingale, “to all noxious influences. They are affected by the same things, but much more quickly and seriously; by want of fresh air, of proper warmth; want of cleanliness in house, clothes, bedding, or

body ; by improper food, want of punctuality, by dullness, want of light, or by too much or too little covering in bed." Nor can the child in sickness understand the *rationale* of treatment, the why and wherefore of special instructions or curtailments of his ordinary routine, and hence those powers of tact and management, of keen perception, of observation, and of self-denial, so essential to the competent nurse, are taxed by children to their utmost. The nursing of children might even be termed a special branch of the nursing art. It would be futile for me, therefore, to enter here into the details of the subject. Those of my readers who desire this information would do well to peruse that excellent work by Dr. West on "How to Nurse Sick Children." There the subject is treated by a practitioner who has devoted many years of his life to the special study of the disorders of childhood, who founded and managed the London Hospital for Children, and who, therefore, can write as one with authority.

.

And now my task is completed. I have endeavoured, as stated in my introduction, to place within your reach knowledge which, if followed out by practice, may bring to yourself or others solace and comfort and mitigation of suffering. I trust that the value of those hints given may not in any degree be lessened by the fact that others may have been left unsaid.

GLOSSARY.

- Abdomen*—The belly.
- Abnormal*—Irregular ; unusual.
- Abscess*—A collection of pus.
- Acute*—Applied to violent and severe disease.
- Affusion*—The pouring on of fluid.
- Aliment*—A nutrient ; a food.
- Anæsthesia*—Loss of sensation.
- Anæsthetic*—A substance which induces anæsthesia.
- Anodyne*—That which soothes pain.
- Antidote*—That which counteracts a poison.
- Antiseptic*—That which prevents putrefaction.
- Anus*—The lower opening of the bowel.
- Aperient*—Laxative.
- Artery*—Blood vessel going from heart to tissues.
- Asthenia*—Loss of strength.
- Atony*—Deficiency of strength.
- Axilla*—The armpit.
- Bacteria*—A variety of germ.
- Capillaries*—The smallest blood-vessels.
- Catarrh*—Increased secretion of mucus, used to designate a "cold."
- Cathartic*—Powerful purgative.
- Catheter*—An instrument for withdrawing urine.
- Caustic*—That which destroys tissue.
- Cerumen*—The wax of the ear.
- Cicatrix*—The scar of a wound.
- Clinical*—Relating to patients.
- Clyster*—Injection into the rectum.
- Collapse*—Prostration of vital powers.
- Coma*—Insensibility.
- Congestion*—Undue accumulation of blood.
- Convalescence*—The period of recovery from illness.
- Crisis*—Sudden change.
- Cuticle*—External layer of skin ("scarf skin").
- Cutaneous*—Belonging to the skin.
- Cyanosis*—Lividity.
- Diagnosis*—Recognition of disease by symptoms.
- Diaphoresis*—Perspiration; sweating.
- Diaphoretic*—That which induces sweating.
- Diarrhœa*—Unnatural looseness of the bowels.
- Defecation*—The act of evacuating the bowels.
- Deglutition*—The act of swallowing.
- Desquamation*—Peeling of the cuticle.
- Dietetic*—Relating to diet or food.
- Diuretic*—That which stimulates the urine flow.
- Dyspnea*—Difficulty of breathing.
- Emesis*—Vomiting.
- Emetic*—That which induces vomiting.
- Epistaxis*—Bleeding from the nose.
- Expectoration*—Mucus spat from respiratory passages.
- Fæces*—Motions from the bowel.
- Febrile*—Feverish; of high temperature.
- Fracture*—A break of bone.
- Friction*—Dry rubbing.
- Gangrene*—Death of tissue.
- Gastric*—Relating to the stomach.

- Germicide*—Germ or microbe destroyer.
- Gullet*—The passage leading to the stomach.
- Hæmorrhage*—Bleeding; loss of blood.
- Hepatic*—Relating to the liver.
- Hygiene*—Science of the laws of health.
- Hyperpyrexia*—Exceptionally high fever.
- Inunction*—Rubbing oily substances into a part.
- Jaconet*—A special waterproof material.
- Laryngeal*—Belonging to larynx.
- Larynx*—The upper part of wind-pipe.
- Laxative*—Mild purgative. [pipe.
- Lesion*—Injury to, or morbid condition of, a part.
- Mackintosh*—A special waterproof material.
- Mastication*—The act of chewing.
- Meatus*—A passage.
- Micturition*—The act of passing urine.
- Nasal*—Relating to the nose.
- Nausea*—Sensation of sickness.
- Normal*—Usual; regular.
- Nutrient*—A nourisher; nourishing.
- Pharyngeal*—Relating to the pharynx.
- Pharynx*—The upper part of the gullet.
- Probe*—Instrument for exploring wounds.
- Prognosis*—Foretelling of probable result of disease.
- Purgative*—That which induces evacuation of bowels.
- Pus*—A greenish or yellowish fluid; matter.
- Pustule*—A pimple containing pus.
- Pyrexia*—Fever; increase of body temperature.
- Rectum*—The lower part of the bowel.
- Sedative*—That which allays nervous excitement.
- Septicæmia*—Blood poisoning.
- Serum*—Fluid of blood, minus fibrin.
- Spitula*—Instrument for spreading ointment.
- Sputum*—Expectoration or spit.
- Stethoscope*—A diagnostic instrument for listening to heart or lung sounds.
- Stupor*—Insensibility.
- Subcutaneous*—Under the skin.
- Subnormal*—Under normal.
- Suppuration*—Formation of pus.
- Syncope*—Fainting; failure of heart.
- Tourniquet*—An instrument to arrest blood-flow by pressure on an artery.
- Tremor*—A trembling.
- Truss*—An appliance for treatment of rupture.
- Umbilicus*—The navel.
- Urethra*—The passage out of the bladder.
- Uterine*—Belonging to the womb.
- Uterus*—The womb.
- Vagina*—The passage leading to the womb.
- Veins*—Bloodvessels going to the heart from the tissues.
- Vesicle*—A blister or bleb.
- Volatile*—Passing off in vapour.

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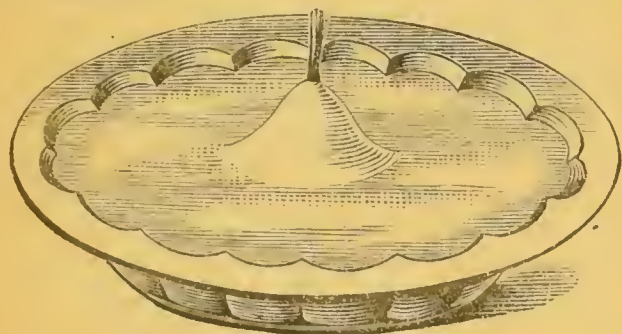
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DR. MATTHEWS, DEREHAM ROAD, NORWICH.

Dereham Road, Norwich, June 13th, 1892.

GENTLEMEN,—You have been kind enough to send me several free orders for your “Wincarnis,” and it has given much relief to several who were in a dying state—they could take the “Wincarnis” when everything else was rejected. I am now begging the favour of asking you if you can do a work of charity in giving a poor dying man some of your “Wincarnis.” *It has kept him up for some weeks.* He is suffering from an internal cancer. His means are all gone. Friends and his family have purchased two large bottles weekly—they cannot afford him more. He has had the most expensive wines, but nothing suits him like the “Wincarnis.” The case is urgent. The gentleman has filled an important position in this county, but his means are gone.

Yours faithfully,

Messrs. Coleman & Co., Ltd.

W. MATTHEWS.

“ WINCARNIS ”

Is sold by all Druggists, Wine Merchants, and Patent Medicine Vendors.

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If there is any difficulty in getting the Wine, write direct to the Manufacturers, who will forward

Sample Pint Bottle, Free by Post, on receipt of 33 Stamps.

Sample Dozen Pint Bottles, Free by Rail, on receipt of 30 Shillings.

Sole Manufacturers: COLEMAN & CO., Ltd.,

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Sole Proprietors of “Ozmazon,” the New Beef Tea, and also Coleman's Crown Imperial Invalid Stout, which is strongly recommended by the Medical Faculty.

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Is the guaranteed product of Prime Ox Beef, and the most perfect form of concentrated nutriment at present known.

It is 50 times more nourishing than ordinary Meat Extract, and infinitely better than the best home-made Beef Tea.

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A new pack of **BOVRIL** (put up in Porcelain Jars), which differs from ordinary **BOVRIL** in being more concentrated and devoid of seasoning, has been prepared specially for use in the sick room, and can be obtained from **CHEMISTS**, Price **1/3**, and (Double Size), **2/**.

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A Special **MEAT JELLY** prepared from finest fresh **ENGLISH OX BEEF**, extracted by gentle heat without added water and guaranteed absolutely pure.

This Essence is enclosed in a Patent Porcelain-Lined Package, and is thus preserved from all injurious contact with the outer Tin. This alone gives it a distinct advantage over other Brands of **Beef Essence or Meat Jelly**, there being an increasing anxiety in the minds of the Medical Profession and the General Public concerning the contaminating action of Tin and Solder upon articles of food, especially food designed for Invalids. By means of a Patent Self-Contained Cutter, the Tin is opened in the most simple and effective manner, leaving an outer loose lid for temporarily covering the contents. This Essence of Beef can be safely relied upon as an admirable stimulant and restorative in cases of enfeebled digestion, nervous exhaustion, loss of blood, sudden shock, or in severe illness where no other food can be tolerated by the patient.

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Contains 50 per cent. Cod Liver Oil, combined with the Hypophosphites of Lime and Soda. By the combination of these popular medicines, we have at the same time a powerful Tonic and a highly nutritive Food.

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Kingston Apothecaries' Hall, 126 Gloucester Street,

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A nutriment peculiarly adapted to the digestive organs of Infants and Young Children, supplying all that is required for the formation of firm flesh and bone. Surprisingly beneficial results have attended the use of this Malted Food, which needs only to be tried to be permanently adopted. Medical Testimony and full Directions accompany each Tin.

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(SEE PAGE 44.)

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